PIONEER
The Art of Entertainment

Service Manual

● DEH-P815/UC

ORDER NO.
CRT1674

MULTI-CD CONTROL HIGH POWER CD PLAYER WITH FM/AM TUNER

DEH-P815 UC

MULTI-CD CONTROL HIGH POWER CD PLAYER WITH RDS TUNER

DEH-P815RDS EW

MULTI-CD CONTROL HIGH POWER CD PLAYER WITH FM/AM TUNER

DEH-P813 ES

COMPACT disc DIGITAL AUDIO

● **See the service manual CX-540(CRT1574) for the CD mechanism description, disassembly and circuit description.**

● **The CD mechanism employed in this model is one of CX-569 series.**

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● **CD Player Service Precautions**

1. For pickup unit(CGY1031) handling,please refer to"Disassembly"(CX-540 Service Manual CRT1574). During replacement,handling precautions shall be taken to prevent an electrostatic discharge(protection by a short pin).
2. During disassembly,be sure to turn the power off since an internal IC might be destroyed when a connector is plugged or unplugged.

SAFETY INFORMATION(EW MODEL)

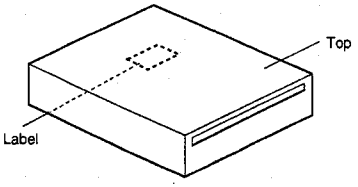
1. Safety Precautions for those who Service this Unit.

- **Follow the adjustment steps (see pages 22 through 32)in the service manual when servicing this unit. When checking or adjusting the emitting power of the laser diode exercise caution in order to get safe, reliable results.**

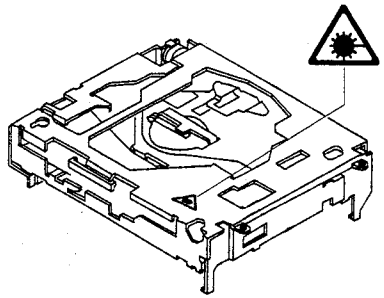
Caution:

1. During repair or tests, minimum distance of 13cm from the focus lens must be kept.
2. During repair or tests, do not view laser beam for 10 seconds or longer.

2. A "CLASS 1 LASER PRODUCT" label is affixed to the rear of the player.



3. The triangular label is attached to the mechanism unit frame.



4. Specifications of Laser Diode

Specifications of laser radiation fields to which human access is possible during service.
Wavelength = 785 nanometers
Radiant power = 69.7 microwatts(Through a circular aperture stop having a diameter of 80 millimeters)
0.55 microwatts(Through a circular aperture stop having a diameter of 7 millimeters)

SAFETY INFORMATION (UC MODEL)

CAUTION

This service manual is intended for qualified service technicians; it is not meant for the casual do-it-yourselfer.
Qualified technicians have the necessary test equipment and tools, and have been trained to properly and safely repair complex products such as those covered by this manual.
Improperly performed repairs can adversely affect the safety and reliability of the product and may void the warranty.
If you are not qualified to perform the repair of this product properly and safely; you should not risk trying to do so and refer the repair to a qualified service technician.

WARNING

Lead in solder used in this product is listed by the California Health and Welfare agency as a known reproductive toxicant which may cause birth defects or other reproductive harm (California Health & Safety Code, Section 25249.5).
When servicing or handling circuit boards and other components which contain lead in solder, avoid unprotected skin contact with the solder. Also, when soldering do not inhale any smoke or fumes produced.

1. SPECIFICATIONS

● **DEH-P815RDS/EW**

General

Power source	14.4 V DC (10.8 — 15.6 V allowable)
Grounding system	Negative type
Max. current consumption	8.0 A
Dimensions (chassis)	178 (W) × 50 (H) × 157 (D) mm
(front face)	188 (W) × 58 (H) × 16 (D) mm
Weight	1.7 kg

Amplifier

Maximum power output	35 W × 4 (EIAJ)
Continuous power output	22 W × 4 (DIN45324, +B = 14.4 V)
Load impedance	4 Ω (4 — 8 Ω allowable)
Preout output level/output impedance	500 mV/ 1 kΩ
Tone controls (bass)	±12 dB (100 Hz)
(treble)	±12 dB (10 kHz)
Loudness contour	+10 dB (100 Hz), +7 dB (10 kHz) (Volume: -30 dB)

Subwoofer

Crossover frequency	50 Hz/ 80 Hz/ 125 Hz
Crossover slope	-12 dB/oct

CD player

System	Compact disc audio system
Usable discs	Compact disc
Signal format	Sampling frequency: 44.1 kHz Number of quantization bits: 16; linear
Frequency characteristics	5 — 20,000 Hz (±1 dB)
Signal-to-noise ratio	94 dB (1 kHz) (IEC-A network)
Dynamic range	90 dB (1 kHz)
Number of channels	2 (stereo)

FM tuner

Frequency range	87.5 — 108 MHz
Usable sensitivity	DYNAS ON: 7 dBf (0.6 µV/ 75 Ω, mono, S/N: 30 dB)
50 dB quieting sensitivity	DYNAS ON: 13 dBf (1.2 µV/ 75 Ω, mono)
Signal-to-noise ratio	DYNAS ON: 67 dB (IEC-A network)
Distortion	0.3 % (at 65 dBf, 1 kHz, stereo)
Frequency response	25 — 15,000 Hz (±3 dB)
Stereo separation	40 dB (at 65 dBf, 1 kHz)

MW tuner

Frequency range	531 — 1,602 kHz
Usable sensitivity	18 µV (25 dB) (S/N: 20 dB)
Selectivity	50 dB (±9 kHz)

LW tuner

Frequency range	153 — 281 kHz
Usable sensitivity	30 µV (30 dB) (S/N: 20 dB)
Selectivity	50 dB (±9 kHz)

Note:
Specifications and the design are subject to possible modification without notice due to improvements.

2. OPERATION AND CONNECTION

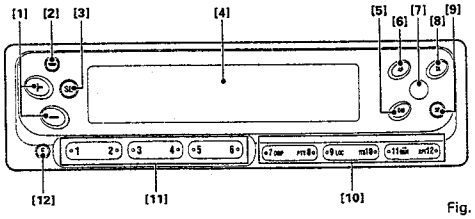


Fig. 1

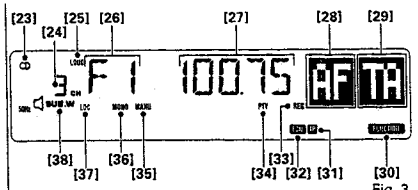


Fig. 3

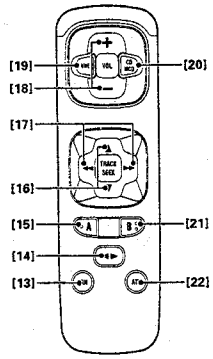


Fig. 2

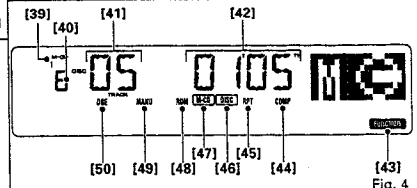


Fig. 4

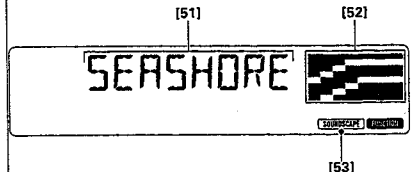


Fig. 5

Making Audio Adjustments

Parts Identification

Fig. 1
[1] Volume

Fig. 2
[15] Shift/SLA
[16], [17] Audio Adjustment
[18] Volume
[22] Attenuator

Fig. 3
[25] Loudness
[38] Sub-woofer

Mode Switching

Each time button [15] is pressed, the mode changes in the following sequence:
Volume adjustment (VOL) — Balance adjustment (FAD/BAL) — Tone adjustment (BAS/TRE) — Sub-woofer (SUB.W) — Loudness adjustment (LOUD)

- When a fader, balance, or bass/treble adjustment is made, the adjustment stops temporarily at the center position. The display changes back to its previous state approximately 8 seconds after an adjustment is made.

When the Unit is Used in Combination with the "DEQ-P800" Hideaway DSP

When the unit is used in combination with the "DEQ-P800" Hideaway DSP, the mode changes in the following sequence each time button [15] is pressed:
Volume adjustment (VOL) — Balance adjustment (FAD/BAL) — Automatic volume adjustment (ASL) — Sub-woofer (SUB.W) — Loudness adjustment (LOUD)

- The mode will not be switched to Tone adjustment.
- Please refer to the Hideaway DSP Owner's Manual for the use of automatic volume adjustment (ASL).

Adjusting the Volume

The volume is increased by pressing the (+) side of button [1] or [18], and decreased by pressing the (–) side. (Display shows "VOL 00" ~ "VOL 30".)

- *When driving, the volume should be adjusted to a level that allows sounds outside the vehicle to be heard.*

Adjusting the Balance

Press button [15] to select the balance adjustment mode ("FAD" lights). Fader adjustments are made using the ▲ or ▼ side of button [16]. To adjust the balance, press either the ◀◀ or ▶▶ side of button [17] to display "BAL", then make the adjustment with the ◀◀ or ▶▶ side of the button.

Fader
The balance is gradually changed to front speaker sound only, by pressing the ▲ side of button [16], and to rear speaker sound only, by pressing the ▼ side. (Display shows "FAD F9" ~ "FAD R9".)

- When a two-speaker system is used, you should set "FAD 0".

Balance
The balance is gradually changed to left speaker sound only, by pressing the ◀◀ side of button [17], and to right speaker sound only, by pressing the ▶▶ side. (Display shows "BAL L9" ~ "BAL R9".)

Adjusting the Tone

Press button [15] to select the tone adjustment mode ("BAS" lights). Use the ◀◀ or ▶▶ side of button [17] to select the tone you want to adjust. Pressing the ◀◀ side selects BAS, and pressing the ▶▶ side selects TRE.

Bass Adjustment
Select the bass adjustment mode. Bass intensity is gradually increased by pressing the ▲ side of button [16], and decreased by pressing the ▼ side. (Display shows "BAS –6" ~ "BAS +6".)

Treble Adjustment
Select the treble adjustment mode. Treble intensity is gradually increased by pressing the ▲ side of button [16], and decreased by pressing the ▼ side. (Display shows "TRE –6" ~ "TRE +6".)

Sub-woofer

When a sub-woofer is used with the unit, the sub-woofer setting should first be switched to ON.

Using the Sub-woofer Function

1. Press button [15] repeatedly to change to the sub-woofer mode ("80Hz 0" is displayed).
2. When button [15] is pressed for 2 seconds or more, "SUB.W" [38] lights, and the sub-woofer setting changes to ON.
3. To cancel the sub-woofer function, press button [15] repeatedly to change to the sub-woofer mode, and press button [15] for 2 seconds or more while the sub-woofer display is shown.

Adjusting the Frequency and Output Level

1. Press button [15] repeatedly to change to the sub-woofer mode.
2. Adjust the frequency and output level adjustment while the sub-woofer display is shown. Press the ◀◀ or ▶▶ side of button [17] to adjust the frequency, and press the ▲ or ▼ side of button [16] to adjust the output level. The frequency can be set to 50 Hz, 80 Hz, or 125 Hz, and an output level can be selected in the range from –6 to +6.

Adjusting the Loudness

The loudness function compensates for deficiencies in the low and high sound ranges when listening to the unit at low volume.

1. Press button [15] to select the loudness adjustment mode (display shows "LOUD OFF").
2. Pressing button [15] for 2 seconds or more turns the loudness function ON ("LOUD" [25] lights). To cancel the loudness function, press button [15] again for 2 seconds or more ("LOUD" [25] goes off).

Using the Source Level Adjuster

This function compensates for the difference in volume when the source is switched.

- Compensation is performed on the basis of the FM volume, and therefore the FM volume cannot be adjusted.

1. Check the FM volume.
2. Switch to the source you want to adjust, and check the difference in volume between that source and FM.
3. Press button [15] for 2 seconds or more to change to the SLA mode. The current level, "V 0", is displayed.
   - The SLA mode is canceled after 8 seconds.
4. Adjust the volume level by pressing the ▲ or ▼ side of button [16]. (Display shows "V –4" ~ "V +4".)

Attenuator

Pressing button [22] reduces the volume by approximately 90% ("ATT" flashes). The original volume is restored by pressing the button once again.

Using the Tuner

Parts Identification

Fig. 1
[3] Source Switching
[6] AF
[8] TA
[10], [11] Preset
[10] Functions
- ⑦ PTY Display Switching
- ⑧ PTY Seek/PTY Setting
- ⑨ Local Mode/Local Sensitivity
- ⑩ DYNAS
- ⑪ Preset Scan/BSM
- ⑫ FM Monaural/Seek, Manual Switching

[12] Function Switching

Fig. 2
[14] Band
[16] Preset Tuning
[17] Tuning
[19] Source Switching

Fig. 3
[23] FM Stereo
[24] Preset Number
[26] Band
[27] Frequency
[28] AF
[29] TA
[30] Function
[31] TP
[32] EON
[33] REG
[34] PTY
[35] Manual
[36] FM Monaural
[37] Local Mode

Function Switching

Button [10] has two functions. It switches FM monaural, BSM, etc. ON and OFF, and it also serves as the preset button for the FM1 band. Press button [12] to switch the function as desired.

Functions ON ([30] lit)
To use the buttons in bank [10] with functions such as FM monaural and BSM, set functions ON.

Functions OFF ([30] off)
Leave the functions OFF when using button [10] as the preset button for the FM1 band.

Listening to the Radio

Electronic Tuner
Frequency allocation differs depending upon the area. This unit has been designed in accordance with the frequency allocations for Western Europe, Asia, the Middle and Near East, Africa, Australia and Oceania. Use in other areas may result in improper reception of AM.
The RDS function does not work in regions with no RDS broadcast services.

1. Press button [3] or [19] to switch the source to the tuner.
2. Press button [14] to select the band. The band changes each time the button is pressed as follows:
   FM1 — FM2 — MW/LW
   - MW and LW together comprise one band.
3. Select a station using manual tuning or seek tuning.
   - 3–1. Pressing button ⑫ of bank [10] for 2 seconds or more switches between seek and manual tuning alternately. When manual tuning is selected, "MANU" [35] lights.
   - 3–2. Tune by pressing the ◀◀ or ▶▶ side of button [17]. (When a stereo station is tuned in, "○" [23] lights.)
   - When the function is OFF, switching between seek and manual tuning can not be done in FM1 stations. Press button [12] to turn the function ON.

Seek Tuning
When the button is pressed, a station with a signal of a given strength or greater is tuned in automatically.

Manual Tuning
When the button is pressed, the frequency changes step by step.

Preset Memory

The radio stations can be stored in memory under buttons ① to ⑥ of [11].

- FM1 bands can be stored in the memory of button [10] (⑦ to ⑫). Leave the function OFF when storing memory into button [10].

1. Tune in to the station to be stored in memory.
2. Store the station in memory by pressing one of the buttons (① to ⑥) for at least 2 seconds. When the [24] number stops blinking and there is a beep, the station will be stored in memory under the button pressed.
   - Up to 18 FM stations (12 stations on FM1 and 6 stations on FM2) and 6 MW/LW stations can be stored in memory.

Preset Tuning

The radio stations stored in memory can be recalled by pressing the respective button ① to ⑥ of [11]. The station stored under that button will be recalled. (The number of the button pressed will be displayed at [24].)

- The FM1 band can recall broadcast stations stored in the memory of button [10]. Set functions OFF before recalling a station memorized in one of the buttons in bank [10].
- When using the remote controller, a station memorized in a button in bank [10] or [11] can be recalled by pressing the ▲ or ▼ side of button [16].

Note:
When using a button in bank [10] in the operations in the following sections, turn functions ON first.

BSM (Best Stations Memory)

The radio stations having a strong signal can be tuned automatically and stored in memory under buttons ① to ⑥ of [11].
Press ⑪ of button [10] for at least 2 seconds. (The "BSM" will blink.) After "BSM" stops blinking, the stations will be stored in memory under buttons ① to ⑥ of [11].

- The FM1 band can also be stored in the memory of button [10].
- BSM can be canceled mid-operation by pressing ⑪ of button [10].
- The stations will be stored under buttons ① to ⑥ in the order of their signal strength. The strongest station will be stored under button ①, followed by stations with lower signal strengths.
- If there are fewer than 6 stations whose signal is strong, there will be spare memory.
- It will take almost 30 seconds for BSM to be completed.

Preset Scan Tuning

This recalls in sequence all the stations stored in memory under the buttons [11] for 8 seconds each. Press ⑪ of button [10]. (The [24] number will blink.) To cancel, press the button again. After the desired station is tuned, cancel the preset scan tuning. The station will then continue to be received.

- Stations stored in memory under the buttons [11] but whose signal is weak will not be recalled.
- The FM1 band can recall broadcasting stations stored in the memory of button [10].

Local Seek Tuning

When the local mode is selected, seek tuning sensitivity changes and only stations with a stronger signal than in the case of normal seek tuning are tuned to. The local mode sensitivity can also be adjusted.

To Select Local Mode
Press button ⑨ of bank [10]. ("LOC" [37] lights.) To cancel local mode, press the button once again.

Adjusting Local Seek Sensitivity
The sensitivity can be adjusted in 4 steps for FM and 2 steps for MW/LW.

- LOC-4 tunes in only the stations with the strongest signals, and LOC-3, LOC-2, and LOC-1 tune in stations with progressively weaker signals.

1. Select the local seek sensitivity adjustment mode. Press button ⑨ of bank [10] for 2 seconds or more. (The current sensitivity is displayed.)
   - The local seek sensitivity adjustment mode is canceled after approximately 5 seconds.
2. Press the ◀◀ or ▶▶ side of button [17] to adjust the sensitivity.

FM Monaural Reception

If the noise in a stereo broadcast is distracting, you can reduce the noise by switching to monaural reception. Press button ⑫ of bank [10]. ("MONO" [36] lights.) To cancel monaural reception, press the button once again.

DYNAS Function

If the FM broadcast being received is not clear because of interference from another station, interference from other stations can be prevented by turning on the DYNAS function.
Pressing button ⑩ of bank [10] for 2 seconds or more switches the DYNAS function ON and OFF alternately.

Using the RDS Function

What is RDS?
RDS (Radio Data System) according to a CENELEC EN50067 is a system for transmitting data signals from FM broadcast transmitter along with the normal sound program. These data signals, which are imperceptible to listeners, are intended to aid radio listeners in tuning their receivers to a desired station. RDS receivers can decode these data signals for display or control purposes.
RDS digital signal includes various data, such as PI, PS, AF, TP, TA, EON and PTY.

PI .....**Program Identification Code**
PS .....**Program Service Name**
AF .....**List of Alternative Frequencies**
TP .....**Traffic Program Identification Code (Similar to SK signal of ARI system)**
TA .....**Traffic Announcement Code (Similar to DK signal of ARI system)**
EON.....**Enhanced Other Network information Code. (In some countries, EON is not offered by broadcasters.)**
PTY.....**Program type ID code**

RDS Function of this Unit
This unit has the following functions for making use of RDS data.

- PS, the name of the currently listened station is displayed.
- AF (Alternative Frequency) function. This enables the receiver to automatically retune to more suitable frequencies transmitting the same program.
- TP/TA, EON, user selectable reception of the traffic information service, offered by RDS.
- The PTY code permits automatic reception of the broadcast having the same type of program.

Network/Station Name Display

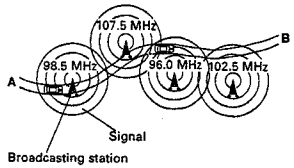
Switch the tuner on and choose one of the 2 FM bands.
When you tune into an RDS station with manual or seek tuning, the frequency display changes to the network/station name display after a few seconds by means of the PS code.

- The RDS functions of this unit use RDS codes transmitted along with FM broadcasts. RDS doesn't work on the MW or LW bands.
- The RDS functions may not work properly in areas where the RDS transmissions are at an experimental stage or where there are flaws in the broadcasting system.
- Hold down button ⑦ of Bank [10] for more than 2 seconds to change the network/station name display to a frequency display. The frequency will be displayed only while the button is being held down.

AF Function

This receiver retunes automatically to a more suitable transmitter, contained in the list of Alternative Frequencies (AF), to enable the motorist to keep listening to programs in the same network.

Example:
If a motorist travels as shown below, from point A to point B, (and has selected AF function) then the receiver will automatically retune to a more suitable frequency transmitting the same program. This is shown by the automatic retuning from 98.5 MHz to 107.5 MHz to 96.0 MHz to 102.5 MHz.



To activate the Alternative Frequency Function, press button [6], "AF" [28] will appear on the display. Once tuned to a RDS station, as long as you drive within an area served by the same network, the receiver will automatically retune to a more suitable station transmitting the same program, by utilizing the data in the AF list.

- "PI SEEK" will appear on the display, if the AF function has been selected, and a suitable AF station cannot be found. In this case, the receiver will mute the radio sound and search the frequency band, in order to find a station with the same PI code. The receiver will return to the original frequency if the same or related PI code cannot be found.
- The AF function will not work in the following cases:
  - when the receiver is tuned to a non-RDS station. (local station)
  - when the RDS station does not transmit any AF list data.
  - when the receiver cannot receive the AF list due to disturbances.

When the receiver is unable to find a PI code, the box of "AF" [28] will start rotating. Thus indicating that the AF function cannot be performed.

Preset Recall

- When recalling preset stations in the AF mode, the tuner will be tuned to the stored frequency and the AF function will be operative i.e. when the signal of the recalled station is weak or has a different PI, the radio will look into the AF list and if necessary start a PI-seek in order to find a station with the same or related PI code. When the tuner is performing a PI seek "PI SEEK" is shown on the display. If the PI seek is successful, the tuner will be tuned to the new frequency that transmits the same program service (i.e. with the same PI code) and the display will show the stored PS. If the PI seek is not successful, the tuner will return to the stored frequency. If a new station (with a different PI code) would be received on this frequency, this station will become audible. The PS of the received station is shown on the display. (In this case, the preset number disappears, indicating that the recalled station and the station being received are different.)
- When recalling preset stations in the AF=OFF mode, the tuner will be tuned to the stored frequency and the display will show the stored PS. In case the tuned station has a PI code that is different from the stored one, the tuner will accept the new PI code and stay tuned to the initial frequency. The display will show the new PS when the signal of the tuned station is strong enough.

Listening to Regional Stations

In some countries a particular program service may "opt out" during a certain part of the day in several regional variants at particular locations. Since these regional variants are broadcasting a different program they temporally have a PI and a PS that is different from the main program service. The PI's are mostly "generically linked". The AF list may either be common for all regional variants or each regional variant may have its own AF list.
In other countries there may be regional stations which are not an "opt out" of a particular main program service but which have an independent existence. These regional stations all have a different PS. Their PI's may be "generically linked" and their AF lists may carry frequencies which are alternatives for that regional station only.

1)Regional OFF Mode
When AF is ON and REG is OFF, the receiver will switch automatically to regional stations that are likely to be broadcasting the same program but which do not necessarily match the region code. If this results in repeated reception of undesired different program contents, switch to the REG ON mode.

2)Regional ON Mode
When AF is ON and REG is ON, the receiver will switch automatically only to regional stations that precisely match the region code and are therefore definitely broadcasting the same program.

REG ON/OFF
To put the radio in the REG ON mode, press button [6] for more than 2 seconds. "REG" [33] will appear on the display.
To cancel the REG ON mode i.e. to put the radio back in the default REG OFF mode, press button [6] again for more than 2 seconds. "REG" [33] will disappear from the display.

PTY Function

This unit's PTY function uses the PTY codes put out by the RDS station to provide three functions: PTY Display, PTY Seek, and PTY Alarm.

- PTY Display is a function that shows the program type of a received station if the broadcast station is an RDS station and is putting out a PTY code.
- PTY Seek is a function that receives RDS stations broadcasting the program type that the user has selected beforehand.
- PTY Alarm is a function that receives an RDS station after picking up an emergency PTY alarm code put out by that station when a natural disaster or nuclear accident, etc., has occurred.

PTY indication switching
When an RDS station is received, the network/station name display appears. At this point, if the unit has picked up the PTY code, press [10] the ⑦ button, and PTY (program type) will be displayed for 8 seconds.

- PTY display contents are of the following 16 types: NO PTY, AFFAIRS, CLASSICS, CULTURE, DRAMA, EASY MUS, EDUCATE, INFO, L.CLASS, NEWS, OTH MUS, POP MUS, ROCK MUS, SCIENCE, SPORT, VARIED
- Some stations may broadcast program contents that differ from the PTY code.
- "NO PTY" is displayed when no PTY code can be picked up from the received station.

Setting the program type

1. Press and hold down [10] the ⑧ button for at least 2 seconds to switch to the PTY setting mode. ("PTY" [34] will light and the program types will be shown on the display for about 5 seconds.)
2. While the program types are shown on the display, press the ◀◀ side or ▶▶ side of the [17] button to select the type that you want.

Note:
In the CURRENT mode, if the currently received station is an RDS station and the PTY code has already been picked up, then the program type is automatically set to match that station's PTY code.

PTY Seek
For automatic reception of RDS stations having the PTY code that you have selected beforehand.
Pressing [10] the ⑧ button causes your selected program type to flash on the display and PTY SEEK to begin ("PTY" [34] flashes).

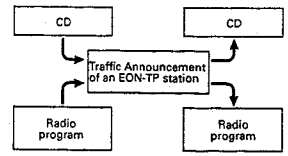
- PTY seek automatically receives RDS stations having a different PI code with the set PTY code. However, it will return to the previous station if "NO PTY" is displayed.
- If PTY SEEK is unsuccessful, "NO PTY" will be shown on the display for about 2 seconds, after which it will return to the station received before PTY SEEK began.
- Non TP RDS stations may be received during PTY seek even if TA (Traffic Information Standby) is on. In this case an alarm sounds after about 30 seconds to tell you that it is not a TP station.

PTY Alarm
Among the PTY codes there is also one for emergency announcements warning of natural disasters, nuclear reactor accidents, etc. In case of such disasters, RDS stations may output this emergency PTY alarm code. When this unit is ON (not during MW/LW reception), and this PTY code is picked up, ALARM will light on the display, volume will be set to TA interrupt level, and that RDS station will be received. When the RDS station stops putting out the emergency PTY alarm code, the unit will return to the previous source. To return to the previous source during reception of the emergency program, press button [8].

Traffic Information Reception

TP and EON-TP function
When a traffic information station (TP station) is selected, "TP" [31] lights on the display, thus indicating traffic report can be received through this station. The "EON" [32] and "TP" [31] indicator will light on the display when a selected station (this network) is broadcasting EON information which cross-references at least one program service which carries traffic information, thus indicating traffic report can be received through another program service by using the EON function of this unit.
In both cases, by briefly pressing button [8], traffic report waiting status will be entered.

Traffic information reception by EON-TP



Traffic Announcement Volume Adjustment

- The volume level for traffic information broadcasting is temporarily stored in memory.

TP Alarm Function

- In TA mode, about 30 seconds after "TP" [31] disappears from the display, which occurs if the signal from the TP becomes weak, an alarm sounds for 10 seconds to tell you to tune to another TP station.

TA Reception during CD Play

- If the radio is already set to the FM band and tuned to a TP or EON-TP station, even when listening to the built-in CD player or the multi-CD player, when the button [8] is pushed ("TA" [29] is shown on the display), traffic report waiting will begin. When a traffic report begins, the system will switch from CD to the traffic report.

BSA Function

- While button [8] is on, ("TA" [29] is shown on the display) and AF is off, and you are listening to either the built-in CD player or multi-CD player, should the TP station become weak, the radio will start BSA (Best TP Station Auto Search) 10 seconds after "TP" [31] disappears from the display. The tuner will automatically tune to the strongest TP station in the area, and will stand by for a traffic bulletin. BSA does not work when the AF function is selected, so press button [6] to turn the AF function off.

TP Alarm Function

- In AF mode, about 30 seconds after "TP" [31] disappears from the display, which occurs if the signal from the TP becomes weak, an alarm sounds for 10 seconds to tell you to tune to another TP station.

Tuning Functions on each RDS mode

Tuning Mode	AF Mode	TA Mode & AF plus TA Mode
Seek Tuning will stop to find,	RDS Stations	TP or EON-TP Station
BSM will select and memorize in presets,	RDS Stations	TP Stations

Non-RDS stations such as those using the Swedish MBS system may be tuned in as RDS stations, but this is due to both systems using the same 57 kHz subcarrier frequency and is not a malfunction of the unit.

Tuning Steps

The tuning step is normally 50 kHz during seek tuning on an FM band. However this tuning step changes to 100 kHz when the set is in AF or TP mode. In some countries it may be desired to set a tuning step of 50 kHz in AF mode by holding down button ① of Bank [11] while turning the ignition key from OFF to ON.

- During manual tuning, the step does not change; it remains fixed at 50 kHz.
- The tuning step will return to 100 kHz if the batteries supply is temporarily disconnected or the clear button is pressed.
- In AF mode, only those stations being broadcast at 100 kHz steps are subject to AF reception (CENELEC STANDARD).

Playing a CD

A separately available multi-CD player (such as the CDX-P1210) can be controlled as well as the built-in CD player.

Precautions When Using the Multi-CD Control

- If the IP-BUS extension adapter is used, up to 4 multi-CD players can be connected. When two or more CD players are connected, their priorities must be specified for the Multi-CD players. See the Multi-CD players instructions and set the address switches correctly.

Parts Identification

Fig. 1
[3] Source Switching
[10], [11] Disc Number Search
[10] Functions
⑦ Display Switching/Disc Title
⑧ Pause/Random Playback
⑨ Title List/ITS Clear
⑩ ITS/ITS Playback
⑪ Scan Playback/Digital Compression
⑫ Playback Mode Switching
/Track Number Search–
Fast Forward, Reverse Switching
[12] Function Switching

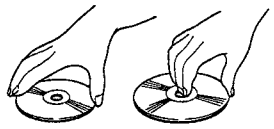
Fig. 2
[14] Multi-CD Player Switching
[16] Disc Number Search
[17] Track Number Search/
Fast Forward, Reverse
[20] Source Switching

Fig. 4
[39] Multi-CD Player Number
[40] Disc Number
[41] Track Number
[42] Playback Time
[43] Function
[44] COMP
[45] One Track Repeat
[46] Disc Repeat
[47] Magazine Repeat
[48] Random
[49] Fast Forward/Rewind
[50] DBE

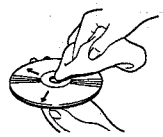
Discs

- *Only use compact discs (optical digital audio discs) bearing the mark shown below.*

- *Do not use cracked, scratched, or warped discs.*
- *Do not touch the disc's playing side. Handle the disc as shown below.*



- *Do not affix any label on the disc.*
- *Do not apply any vinyl record spray, anti-static agent, benzene, paint thinner, or any other volatile chemicals.*
- *Do not play a dirty disc. Use a soft cloth to clean a dirty disc as shown below. Wipe the disc outward from the center.*



- *Do not place the disc in high temperatures and direct sunlight.*
- *Be sure to store the disc in its case.*

CD Playing Environment

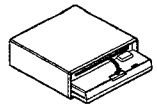
- Disc playback may be interrupted by sudden road shock.
- When the air temperature is low and the car heater is turned on, condensation on the disc and internal parts of the unit may prevent proper playback operation. If this happens, turn off the unit and wait one hour until the condensation is gone. Also, use a soft cloth to wipe off any condensation from the disc.

Using the Built-in CD Player

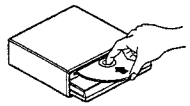
Note:

- *Check that no disc is loaded, then insert a disc.*
- *Do not insert two discs together, as this will damage the unit.*
- *This unit can play an 8 cm CD without an adapter. Do not use an adapter when inserting an 8 cm CD, as the adapter may become detached and prevent the disc from being removed.*

1. Press button [2] to open the front panel [4].

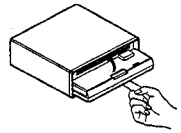


2. When a disc is inserted in the disc slot, the power is turned on and CD playback starts.

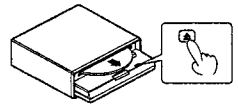


Insert the disc with the recorded surface (iridescent surface) down.

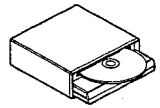
3. Close the front panel and adjust the volume and tone. (The track number [41] and playing time [42] are shown on the display.)



4. To stop playback, press button [3] or [20] to set the source to OFF.
5. To eject the disc, first press button [2] to open the front panel [4], then press the Eject button.



- If a disc is already loaded, CD playback can be turned ON/OFF by pressing button [3] or [20]. When CD playback is turned ON again, it will begin near the track at which playback was stopped.
- If a disc cannot be fully inserted, or playback does not start after a disc has been inserted, there is probably something wrong with the disc. In this case, check the disc for abnormalities.
- If the built-in CD player cannot be operated properly, an error message will appear on the display (e.g. "ERROR-14"). In this case, refer to "Error Display" on page 13 to identify the nature of the error.
- If the disc has been inadvertently inserted with the recorded surface (iridescent surface) facing upward in step 2, the disc will be ejected automatically when the front panel is opened. If the panel is closed, the disc will not be ejected (and playback does not start). In this case, open the front panel, press the Eject button, and remove the disc.
- Do not leave a disc partially inserted as shown in the illustration below, as the disc may bend or fall out.



Using the Multi-CD Player

1. Press button [3] or [20] to switch the source to the multi-CD player. (The multi-CD player number [39], disc number [40], track number [41], and playback time [42] are displayed.)
- When you turn the power on or change the disc to be played, the multi-CD player may perform a preparatory operation (verifying there is a disc, reading disc information, etc.). "READY" is displayed during this time.
- If the multi-CD player is unable to operate normally, an error message will appear on the display (e.g. "ERROR-80"). In this case, refer to "Error Display" on page 13 to identify the nature of the error.

2. To stop disc playback, press button [3] or [20] to switch the source OFF.
- When CD playback is started again, it will begin near the track at which playback was stopped.

Switching functions

(multi-CD player's function)

Button [10] has two functions. It switches ITS, random playback, etc. ON and OFF and it also serves as the disc number search. Press button [12] to switch the function as desired.

- If a 6-Disc Multi-CD player is connected, switching between functions ON and OFF cannot be performed even if button [12] is pressed.

Functions ON ([43] lit)

When using buttons in bank [10] with a function such as ITS or random playback, you should first turn functions ON.

Functions OFF ([43] off)

When using buttons in bank [10] to search the disc number, you should first turn functions OFF.

Switching the multi-CD player

(multi-CD player's function)

A maximum of 4 multi-CD players can be connected to this unit.
Press button [14] to choose the desired CD player. The number of the CD player is indicated in [39] on the display.

Disc number search

(multi-CD player's function)

Select the disc using buttons [10] and [11]. The disc number is indicated in [40] on the display.

- Leave the function OFF when selecting a disc using button [10].
- When using the remote controller, the disc, set in the multi-CD player is switched each time the ▲ or ▼ side of button [16] is pressed.
- It takes a few seconds for CD playback to begin after a button is pressed. This is the time taken to change the disc.

Note:
Leave the function ON when using button [10] for the following operations.

Track Number Search

The track number search function lets you select a particular track on a disc. Check that "MANU" does not light in display [49]. If it does, turn it out by pressing button ⑫ of bank [10] for 2 seconds or more.
The track number [41] is incremented by pressing the ▶▶ side of button [17], and decremented by pressing the ◀◀ side. Holding down the button will increment/decrement the number continuously.

Fast Forward/Reverse

1. Press button ⑫ of bank [10] for 2 seconds or more. "MANU" [49] will light.
2. Press the ▶▶ side of button [17] to fast-forward, or the ◀◀ side to reverse.
- Playback can be heard while fast-forwarding or reversing.

Pausing

The disc playback can be stopped temporarily by pressing ⑧ of button [10]. (The "PAUSE" will be displayed.) To cancel the pause, press the button again.

Repeat

You can select one of the play modes (repeat modes) listed below.

Play mode (repeat mode)	Operation
One-Track Repeat	Play the current track repeatedly. • When you perform track number search or fast forward or reverse, the mode changes to disc repeat mode. • Switching the multi-CD player being played or the disc switches to magazine repeat mode.
Disc Repeat	Play the same disc repeatedly. • Switching the multi-CD player being played or the disc switches to magazine repeat mode.
Magazine Repeat	Play all discs loaded in the magazine in the multi-CD player repeatedly. All discs in the magazine are played repeatedly from the first disc.
ALL Repeat*	The mode changes to this mode when 2 or more multi-play CD players are connected. Multi-CD players 1 to 4 are played.

* When 2 or more multi-CD players are connected.

(Built-in CD player's function)
Each press of button ⑫ in bank [10] causes the mode to change as follows:
One-Track Repeat ("RPT" [45] appears.) — Disc Repeat (Normal playback for built-in CD player) ("RPT" [45] will disappear.)

(Multi-CD player's function)
Each press of button ⑫ in bank [10] causes the mode to change as follows:
One-Track Repeat ("RPT" [45] appears.) — Disc Repeat ("DISC" [46] appears.) — Magazine Repeat ("M-CD" [47] appears.) — ALL Repeat ([45] [46] [47] will disappear.)

Random Play

The microcomputer of the CD player selects plays tracks on discs in random order. Random play is performed according to the current play mode (repeat mode) as follows:

Play mode (repeat mode)	Tracks to be played at random
One-Track Repeat	All tracks on the disc being played. • The play mode changes to disc repeat mode.
Disc Repeat	All tracks on the disc being played.
Magazine Repeat	All tracks on the discs in the magazine being played.
ALL Repeat*	All tracks on all discs in multi-CD players 1 to 4.

* When 2 or more multi-CD players are connected.

1. Select the desired random play mode (repeat mode).
2. Hold down button ⑧ in bank [10] for more than 2 seconds. ("RDM" appears on the display [48].) To cancel random play, hold down button ⑧ in bank [10] for more than 2 seconds again. ("RDM" disappears.)

• Since selections are played in random order, the same selection may be played twice in succession.

Using Scan Play

The first parts of each track are played in succession for about 10 seconds. This function is useful to search for the track or disc you want to listen to. Scan is performed according to the current play mode (repeat mode) as follows:

Play mode (repeat mode)	Tracks to be scanned and played
One-Track Repeat	All tracks on the disc being played. • The play mode changes to disc repeat mode.
Disc Repeat	All tracks on the disc being played.
Magazine Repeat	The first tracks of all the discs in the magazine being played.
ALL Repeat*	First tracks of all discs loaded in multi-CD players 1 to 4.

* When 2 or more multi-CD players are connected.

1. Select the desired scan play mode (repeat mode).
2. Press button ⑪ in bank [10]. ("SCAN" appears on the display.) The first parts of all tracks are played in succession for about 10 seconds.
3. When you hear the track you want, press button ⑪ in bank [10] again to cancel Scan. ("SCAN" disappears.) The track (disc) being played is when played to the end.

• The previous function automatically resumes when a piece of music with which Scan began returns.

ITS (Instant Track Selection)

(multi-CD player's function)

This function lets you program and play the tracks you want. You can listen to just your favorite tracks.

- The ITS function only operates when the multi-CD player is in playback mode.
- The ADPS function* of the multi-CD player lets you program up to 100 discs. (Up to 100 discs can be programmed including disc title inputs.)
  * ADPS: Automatic Disc Program Selection
- Up to 99 tracks can be programmed for a single disc.
- From the 100th disc, the data for a new disc will overwrite the data of the oldest disc, that has not been played back (information has not been updated).
- Tracks are programmed for each disc. Programmed tracks are not erased after the disc is changed.

Programming

1. Play the track you want to program.
2. Press button ⑩ in bank [10] to program the track. ("ITS" appears on the display for 3 seconds.)

• Program tracks while ITS play is not in progress. It is possible during scan play or random play.

ITS Play

(multi-CD player's function)

Tracks are played according to ITS play mode (repeat mode) as follows:

Play mode (repeat mode)	Tracks to be played by ITS
One-Track Repeat	Programmed tracks on the disc being played. • The play mode changes to disc repeat mode.
Disc Repeat	Programmed tracks on the disc being played.
Magazine Repeat	Programmed tracks on the discs in the magazine being played. • If the disc being played contains no programmed tracks, the next disc containing programmed tracks is played.
ALL Repeat*	Programmed tracks on all discs in all magazines in multi-CD players 1 to 4. • If the disc (multi-CD) being played contains no programmed tracks, the next disc (multi-CD) containing programmed tracks is played.

* When 2 or more multi-CD players are connected.

1. Select the desired ITS play mode (repeat mode).
2. Hold down button ⑩ in bank [10] for more than 2 seconds. ("ITS.P" appears on the display.) To cancel ITS play, hold down button ⑩ in bank [10] for more than 2 seconds again. ("ITS.P" disappears.)

- If you try to play a track that is not programmed within the play range of the selected repeat mode by ITS, "EMPTY" will appear on the display for about 3 seconds, indicating that ITS play is not possible.
- You can perform scan play or random play during ITS play. In this case, scan play or random play applies to all the tracks stored in memory. (If the play mode is the magazine repeat mode or all repeat mode, scan play applies to all the tracks of the discs in the magazine stored in memory.)
- During ITS play, multi-CD players containing discs with programmed tracks are switched, and disc and track number search is performed on programmed tracks. So, you cannot switch to any tracks or discs that are not stored in memory.
- When you turn the power on or change the disc to be played, the multi-CD player may perform a preparatory operation (verifying there is a disc, reading disc information, etc.). "READY" is displayed during this time.

Erasing the ITS Program

You can erase one or all selections of the program for the disc being played by ITS.

To erase a single selection:

1. Start ITS play.
2. Play the track you wish to erase by using disc number search or track number search.
3. Hold down button ⑨ in bank [10] for more than 2 seconds.

- If programmed tracks are completely erased, "EMPTY" appears on the display and the ITS play will be canceled.

To erase the disc program:

1. Start normal play.
2. Play the disc you wish to erase by using disc number search.
3. Hold down button ⑨ in bank [10] for more than 2 seconds to erase the program. ("CLEAR" appears on the display for about 3 seconds.)

Disc Title Input

The title of the disc loaded in this unit and the title of the disc in the Multi-CD player can be stored to the memory. The title stored for the disc can be displayed.

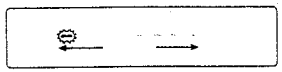
- This function is valid only when the Multi-CD player is connected to this unit.
- The ADPS function* of the multi-CD player lets you enter titles for up to 100 discs. (Up to 100 discs, including ITS, can be programmed.)

* ADPS: Automatic Disc Program Selection

- A disc title can consist of up 8 characters for a single disc.
- From the 100th disc, the data for a new disc will overwrite the data of the oldest disc, that has not been played back (information has not been updated).
- One title is stored for each disc. The title stored for a disc is not erased after the disc is changed.

Entering Titles

1. Select the disc for which you want to enter a title.
2. Hold down button ⑦ in bank [10] for more than 2 seconds to select title input mode.
3. Press the ◀◀ or ▶▶ side of button [17] to select the input position. The input position moves continuously when you hold down either side of the button.



4. Select characters using the ▲ or ▼ side of button [16]. When you hold down either side of the button, the character changes continuously. Each press of the ▲ side changes the character from "A — B — C...", while each press of the ▼ side changes the character from "C — B — A". To enter a space, select the space sign (_).
5. Enter all characters by repeating steps 3 and 4.
6. Press button ⑦ in bank [10] to store them in memory.
   The title will appear on the display.

Display Switching

Pressing button ⑦ of bank [10] switches between the elapsed playback time display and the disc title display alternately.
Press button [14] during title indication to make the track display and playback time display appear for about 8 seconds.

- Nothing is displayed for discs having no titles.

Disc Title List
(multi-CD player's function)

You can list all discs loaded in the magazine being played. This function is convenient for checking discs in the magazine being played.
The disc title list function only works when the multi-CD player is in playback mode. Each press of button ⑨ in bank [10] displays the titles of the discs in magazine being played in ascending order of disc number. The disc title list mode is displayed for about 8 seconds, then the normal operation display returns.

- Nothing is displayed for discs having no titles.
- Trays with no discs are skipped.

Select the disc to be played from the disc list display
(multi-CD player's function)

1. Press button ⑨ in bank [10] to display the disc title.
2. When the title of the disc you want to listen to is displayed, press button ⑦ in bank [10]. That disc is played.

CD sound quality adjustment function

A COMP (compression) function and D.B.E. (Dynamic Bass Emphasis) function can be used with this unit. The COMP and D.B.E. functions can also be used when a multi-CD player that has these functions is connected. (If you connect a Multi-CD player that does not feature these functions, even if you try to switch to these functions, "NO COMP" is displayed, indicating that switching is not possible.)

COMP (Compression) function

This function suppresses loud sounds while boosting quiet sounds to reduce the difference between the two. Use this function if there is distortion when you raise the volume.
When the COMP function is ON, "COMP" [44] lights in the display.

D.B.E. (Dynamic Bass Emphasis) function

When listening in a car, bass sound may be insufficient. This function boosts bass.
When the D.B.E. function is ON, "DBE" [50] lights in the display.

COMP and D.B.E. switching

You can switch between two COMP and D.B.E. levels. Level switching of both functions at the same time is not possible.

1. Press button ⑪ in Bank [10] for more than 2 seconds to select the switching mode.
2. Each time you press button ⑪ in Bank [10], the mode changes as follows:
   COMP OFF — COMP 1 — COMP 2 — COMP OFF — DBE 1 — DBE 2 — COMP OFF

- With both COMP and D.B.E., the second mode is more effective.

DEH-P815,P815RDS,P813

Error Display

If there is a problem with CD playback, an error code will be displayed.
(Ex.: "ERROR-10")
If an error is displayed, refer to the table below to identify the problem. If the error is displayed even after corrective action is taken, contact your dealer or the nearest authorized PIONEER Service Station.

D: Display
C: Cause
T: Treatment

D: ERROR-11, 12, 14, 17, 30
C: The disc is dirty.
T: Clean the disc.

D: ERROR-11, 12, 17, 30
C: The disc is scratched.
T: Replace the disc.

D: ERROR-11, 14 , 17
C: The disc is inserted with the label side down.
T: Insert the disc with the label side up.

D: ERROR-14
C: An unrecorded CD-R is being used.
T: Check the disc.

D: ERROR-80
C: An empty magazine is in the multi-CD player.
T: Insert discs into the magazine.

D: ERROR-10, 11, 12, 14, 17, 30, A0
C: Electrical or mechanical fault.
T: Turn off the car's ignition and turn it back on again. Or change the source to another one and then change it back to CD.

D: HEAT
C: The CD player's internal temperature is high.
T: Wait until the CD player's internal temperature goes down.

- If an error other than the above is displayed, refer to the multi-CD player's Owner's Manual.

SOUND SCAPE

Parts Identification

Fig. 1
[1] Sub-source volume adjustment
[9] SOUND SCAPE playback/setting mode switching

Fig. 2
[16] Sub-source track selection
[17] Main source track selection
[18] Sub-source volume adjustment

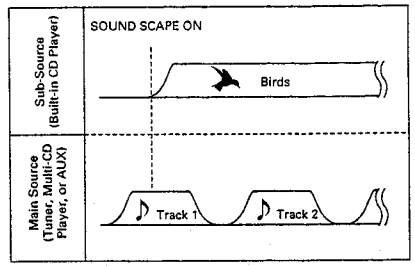
Fig. 5
[51] Sub-source sound effect designation (or track number)
[52] SOUND SCAPE mode symbol
[53] Lit : SOUND SCAPE playback
Flashing: Setting mode

The SOUND SCAPE Function

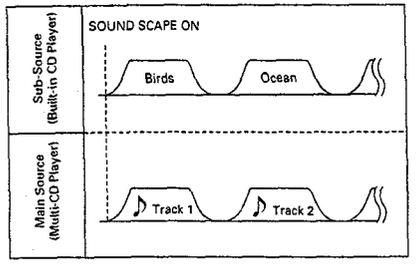
The SOUND SCAPE function plays the built-in CD player when you are listening to the tuner, a separately available multi-CD player, or the AUX source.
The two sources consist of the main source that plays in the usual way, and the sub-source that plays sound effects. The tuner, multi-CD player, or AUX source can be used as the main source, while only the built-in CD player can be used as the sub-source. The SOUND SCAPE function only works with these settings.
The SOUND SCAPE function has three modes, as described below.

MUSIC-MODE 1

Sub-source sound is output while you are listening to the main source. The sub-source repeatedly plays a single track that has been set beforehand.

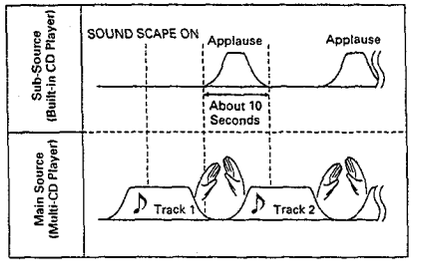


MUSIC-MODE 2 (Program Mode)
You can switch to MUSIC-MODE 2 only when you are listening to a multi-CD player as the main source. The sub-source sound is output during each main source track. You can set the sub-source sound



effect you want for each main source track.
- If you switch to MUSIC-MODE 2 during scan or ITS playback, the main source may not play from the start of a track.

BLANK-MODE
You can switch to BLANK-MODE only when you are listening to a multi-CD player as the main source. The sub-source sound is output for about ten seconds in the silent intervals between tracks. The sub-source sound is faded in when the main source sound falls to a certain level, and is later faded out.



- In BLANK-MODE, the sub-source sound may be output at the following times.
  — If there is an extremely quiet passage in a main source track.
  — If there are pauses in a main source track (such as in dialog).
  — When a track number search is in progress.
- BLANK-MODE may not function if there is only a short interval between tracks.

Sub-Source CD Software
Use of the following CD software is recommended for the sub-source (built-in CD player) in order to make the most effective use of the SOUND SCAPE function.

Supplied CD Software
The supplied CD software has been produced specially for use as the SOUND SCAPE sub-source.

Commercially Available CD Software
CD software containing the sound of waves and other sound effects can be used. When using the SOUND SCAPE function, we recommend using CD software containing music on the main source (multi-CD player).

Using the SOUND SCAPE Function
1. Insert the sub-source CD software in the built-in CD player. (See "Using the Built-in CD Player" on page 9.)
- Check the built-in CD player sound, then follow the procedure below.
2. Switch the source to the main source (tuner, multi-CD player, or AUX).
3. Switch to the SOUND SCAPE mode you want to use. Pressing button [9] switches the SOUND SCAPE mode as shown below.
   With the multi-CD player as the main source:
   MUSIC-MODE 1 → MUSIC-MODE 2 → BLANK-MODE → SOUND SCAPE OFF
   With the tuner or AUX as the main source:
   MUSIC-MODE 1 → SOUND SCAPE OFF

SOUND SCAPE mode	Display	
	[52]	[53]
MUSIC-MODE 1		SOUND SCAPE
MUSIC-MODE 2		SOUND SCAPE
BLANK-MODE		SOUND SCAPE
SOUND SCAPE OFF (e.g.: During Multi-CD Player)		Off

- SOUND SCAPE playback in the selected mode starts about 3 seconds after the mode switching operation. (If the main source is the multi-CD player, display [52] stops flashing.) The display [51] sound effect name and [52] SOUND SCAPE mode symbol indications change back to the original indications after a few seconds. (When commercially available CD software is loaded in the sub-source, the track number is shown in display [51].)
- If the main source is the multi-CD player, you can switch to a different SOUND SCAPE mode during SOUND SCAPE playback by first pressing button [9] to start display [52] flashing, then pressing button [9] again while display [52] is flashing.
- SOUND SCAPE is not canceled when the main source is switched. To cancel SOUND SCAPE, press button [9] until SOUND SCAPE is turned OFF.
- If the disc is removed from the built-in CD player during SOUND SCAPE playback, SOUND SCAPE playback is canceled but main source playback continues.
- If the source is switched to the built-in CD player during SOUND SCAPE playback, playback starts from the track that was being played as the sub-source.

Setting Sub-Source Sound Effects
Sub-source sound effects can be set for each mode.
- When SOUND SCAPE playback is performed after installing the unit or pressing the Clear button, the sound effect to be played on the sub-source is set to track 1.

MUSIC-MODE 1
The track (sound effect) to be played repeatedly on the sub-source is set.
1. Perform the operations in steps 1 to 3 of "Using the SOUND SCAPE Function" and switch the SOUND SCAPE mode to MUSIC-MODE 1.
2. Press button [9] for 2 seconds or more to switch to the MUSIC-MODE 1 setting mode ("SOUND SCAPE" [53] flashes). The name of the currently set sound effect is shown in display [51].
- When commercially available CD software is loaded in the sub-source, the currently set track number is shown in display [51].
3. Press the ▲ or ▼ side of button [16] to choose the track to be played on the sub-source.
4. Press button [9] for 2 seconds or more to memorize the selected track. You will hear a beep when track memorization is finished.
5. Press button [9] to cancel the setting mode. ("SOUND SCAPE" [53] changes from flashing to constant illumination.)

MUSIC-MODE 2 (Program Mode)
The track (sound effect) to be played on the sub-source can be set for each main source (multi-CD player) track.
- You can set the sound effect you want from track 1 through track 16 of the disc being played. For sound effects on tracks 17 onward, setting is performed automatically to sub-source track 1.
- Sound effects on up to 24 discs can be set as the main source.
  —In the case of discs for which disc title input has been performed with the multi-CD player's disc title input function, sound effect setting can be performed separately for each disc. (See "Disc Title Input" on page 12.)
  —If a disc title has not been input for a disc, sound effect setting for that disc cannot be performed separately from other discs. (The same setting applies to all discs for which input has not been performed.)
- Sound effect setting is performed for each main source disc. The settings for a main source disc are not deleted when that disc is changed.
- If settings are made for more than 24 discs, the oldest disc settings are deleted in order, and the new disc settings are memorized.

1. Perform the operations in steps 1 to 3 of "Using the SOUND SCAPE Function" and switch the SOUND SCAPE mode to MUSIC-MODE 2.
2. Play the disc for which you want to make a setting using a track number search.
3. Press button [9] for 2 seconds or more to switch to the MUSIC-MODE 2 setting mode ("SOUND SCAPE" [53] flashes). The name of the sub-source sound effect is shown in display [51], and the main source track number in display [52].
- When commercially available CD software is loaded in the sub-source, the track number is shown in display [51].
4. Press the ◀◀ or ▶▶ side of button [17] to choose the main source track.
5. Press the ▲ or ▼ side of button [16] to choose the track to be played on the sub-source.
6. Press button [9] for 2 seconds or more to memorize the selected track. You will hear a beep when track memorization is finished.
7. You can make settings for tracks up to track 16 by repeating the operations in steps 4 to 6.
8. Press button [9] to cancel the setting mode. ("SOUND SCAPE" [53] changes from flashing to constant illumination.)
9. You can make settings for other discs by repeating the operations in steps 2 to 8.

BLANK-MODE
The sound effect to be played between main source (multi-CD player) tracks can be set.
1. Perform the operations in steps 1 to 3 of "Using the SOUND SCAPE Function" and switch the SOUND SCAPE mode to BLANK-MODE.
2. Press button [9] for 2 seconds or more to switch to the BLANK-MODE setting mode ("SOUND SCAPE" [53] flashes). The name of the currently set sound effect is shown in display [51].
- When commercially available CD software is loaded in the sub-source, the currently set track number is shown in display [51].
3. Press the ▲ or ▼ side of button [16] to choose the track to be played on the sub-source.
4. Press button [9] for 2 seconds or more to memorize the selected track. You will hear a beep when track memorization is finished.
5. Press button [9] to cancel the setting mode. ("SOUND SCAPE" [53] changes from flashing to constant illumination.)

Sub-Source Volume Adjustment
You can adjust the volume of the sub-source played with the SOUND SCAPE function. (The same volume is set for all modes.)
1. Perform the operations in steps 1 to 3 of "Using the SOUND SCAPE Function" to perform SOUND SCAPE playback.
2. Press button [9] for 2 seconds or more to switch to the SOUND SCAPE setting mode ("SOUND SCAPE" [53] flashes).
3. Press the (+) side of button [1] or [18] to increase the sub-source volume, or the (–) side to decrease the volume.
4. Press button [9] to cancel the SOUND SCAPE setting mode. ("SOUND SCAPE" [53] changes from flashing to constant illumination.)

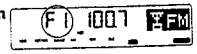
ID LOGIC operations

- This reference card gives a brief introduction to the following functions:
  — Tuner ID LOGIC functions
  — Functions controlled with buttons (7) to (12) when you are listening to a source (tuner, CD player)
- Refer to the owner's manual for more details of the functions outlined in this manual.

Location Setting

Set the name of the country, state, and city (nearest city to the vehicle position) that the vehicle is positioned in.

1. **Press the (AUDIO) button to switch to the FM band.**



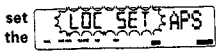
2. **Press the (10) button for more than 2 seconds to switch to the location setting mode.**

3. **Press the (▲/▼) buttons to select the country.**

4. **Press the (▲/▼) button to change the input item to state input.**

5. **Press the (▲/▼) buttons to select the state.**

6. **Press the (9) button to set the city automatically (with the APS function).**



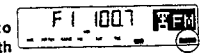
After the APS function ends, location setting is completed and the location setting mode is canceled automatically.

- If the city name is flashing on the display, press the ▲ or ▼ button to select the city nearest your vehicle's position. When city input is finished, press the (10) button to cancel the location setting mode.

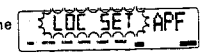
Updating the Vehicle Position While Moving

When you drive away from the set city, update the vehicle position to the city you are heading for.

1. **Press the (F) button to switch to "Functions ON".**



2. **Press the (8) button to update the vehicle position with the APF function.**



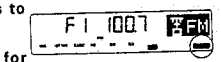
After the APF function ends, the vehicle position is updated.

- The APF function will not work when you are tuned to the AM band.

Updating the Vehicle Position During Operation of a Source Other than the Tuner

When the background APF mode is turned ON, the APF function operates at regular intervals while you are listening to a source other than the tuner (such as the CD player). When you switch back to the tuner, the vehicle position will have been updated to the city nearest your vehicle's position.

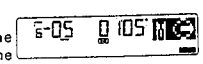
1. **Press the (F) button while receiving radio broadcasts to switch to "Functions ON".**



2. **Press the (7) button for more than 2 seconds to turn the background APF mode ON.**

3. **Switch to a different source (CD player, etc.).**

While you are switched to the source other than the tuner, the APF function will operate and the vehicle position will be updated automatically.



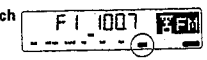
4. **When you switch back to the tuner, the vehicle position will have been updated to the city nearest your vehicle's position.**

- To check the updated city, press the (7) button to switch to the state name/city name display.

Format Tuning

Format tuning lets you tune in a station from among those that can be received from the vehicle position that broadcasts the type of music (format) you want to hear.

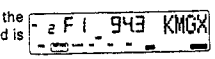
1. **Press the (10) button to switch to format mode.**



2. **Press the button from among buttons (1) to (6) in which the format you want to hear is set.**

Button	Set Format
(1)	TOP 40, CLS ROCK, ROCK
(2)	EASY LIS, NOSTLGIA, SOFT AC, HITS AC, OLDIES
(3)	CLASSIC, JAZZ, PUBLIC
(4)	R AND B, SOFT R/B
(5)	COUNTRY
(6)	TLK/NEWS, CBC ENGL, CBC FRCH
(7) (8) (9) (10) (11) (12)	You can set the format you want. See "User Format Setting" for the setting method.

A station that is broadcasting the format of the button you pressed is tuned.



- Pressing the same button repeatedly lets you tune in another station broadcasting the same format as that of the pressed button.
- When using format tuning with buttons (7) to (12), press the (F) button to switch to "Functions OFF".

User Format Setting

You can set the formats you want from among 25 formats in buttons (7) to (12). The 25 formats are as follows:

EASY LIS, NOSTLGIA, SOFT AC, HITS AC, OLDIES, TOP 40, CLS ROCK, ROCK, COUNTRY, R AND B, SOFT R/B, CLASSIC, JAZZ, PUBLIC, TLK/NEWS, SPANISH, ETHNIC, VARIETY, RELIGION, C GOSPEL, S GOSPEL, B GOSPEL, CBC ENGL, CBC FRCH, MISC

1. **Press the (F) button for more than 2 seconds to switch to the user format setting mode.**

2. **Press the (▲/▼) buttons to select format you want to set.**

3. **Press the button for more than 2 seconds from among buttons (7) to (12) in which you want to set the format.**

The number of the set button lights.

The format is set in the pressed button when you hear a beep.

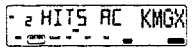
- If you press a button for less than 2 seconds, the format currently set in the pressed button will be displayed.

4. **Repeat the operations in procedures 2 and 3 to set formats in the required buttons.**
5. **Press the (10) button to cancel the user format setting mode.**

Format BSM

The frequencies of stations with the same format can be stored automatically in buttons (1) to (6).

1. **Tune in a station that has the format you want to store.**
   - Press the (7) button to switch to the format name/call sign display, and check that the format is the one you want to store.



2. **Press the (F) button to switch to "Functions ON".**

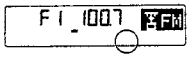
3. **Press the (11) button for more than 2 seconds to start format BSM.**

The frequencies of other stations with the same format will be stored automatically in buttons (1) to (6).

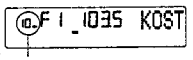
Preset Tuning

You can recall stations stored in buttons (1) to (6).

1. **Press the (10) button to switch to normal mode.**



2. **Press the button from among buttons (1) to (6) in which the station you want to recall is stored.**



The number of the pressed button lights.

- When recalling a station stored in one of buttons (7) to (12), press the (F) button to switch to "Functions OFF".

Functions of Buttons 7 to 12

When you are listening to a source (tuner, CD player), you can control the following functions with buttons (7) to (12).

- "2 s" in the button column means that the button is pressed for more than 2 seconds.
- For the tuner, the following functions can be controlled when in the format mode with "Functions ON" set.
- For the built-in CD player, the functions with button (7) can be controlled when the multi-CD player is connected to this unit.
- When the unit is used together with a 12-disc multi-CD player, the following functions can be controlled when "Functions ON" is set.

Button		Tuner	Built-in CD Player	Multi-CD Player (6-disc or 12-disc)
(7)		Display switching	Display switching	
	(2 s)	Compass mode	Disc title input mode	
(8)		APF	Pause	
	(2 s)	Background APF mode	Random play	
(9)		Local mode	—	Disc title list
	(2 s)	Local sensitivity adjustment mode	—	ITS clear
(10)		Display switching of multi-station	—	ITS memory
	(2 s)	BSM	—	ITS play
(11)		Format scan	Scan play	
	(2 s)	Format BSM	Compression/DBE switching mode	
(12)		Wide/narrow switching	Repeat play	Play mode (repeat mode) switching
	(2 s)	Seek/manual tuning mode switching	Track number search/fast forward-reverse mode switching	

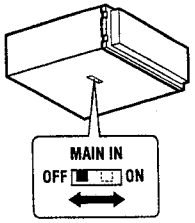


Fig. 6

Installation

The MAIN IN Switch (Fig. 6)

When connecting an equalizer or a DSP (DEQ-P800, etc.) to this unit, set the MAIN IN switch to the ON position using the tip of a pen, etc. When not connecting an equalizer or a DSP, set the MAIN IN switch to the OFF position. The system will not work properly if this switch is set wrongly.

- Operation of three RCA cords change as follows according to the ON/OFF position of MAIN IN switch.

	MAIN IN OFF ON	MAIN IN OFF ON
Gray label	Subwoofer output	Audio output
White label	Front output	Front input
Green label	Rear output	Rear input

CAUTION

- *When connected with the "DEQ-P800" Hideaway DSP, be sure to change the MAIN IN switch to the ON position. If the power source is applied leaving the MAIN IN switch OFF, it is dangerous because a very big noise comes out from the speaker.*

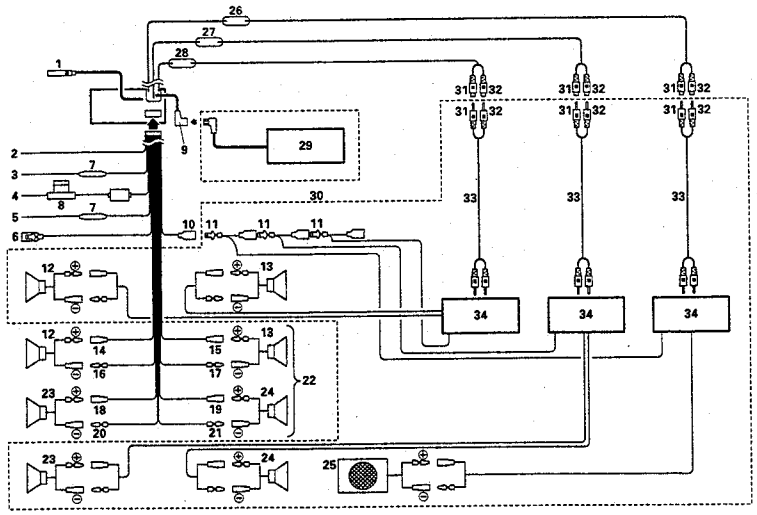


Fig. 7

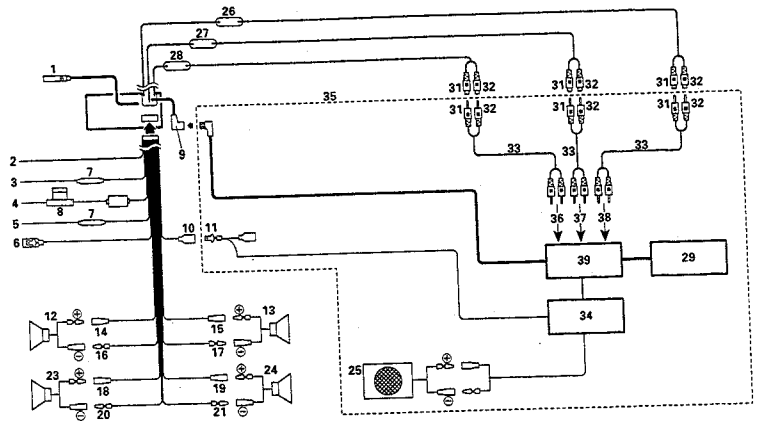


Fig. 8

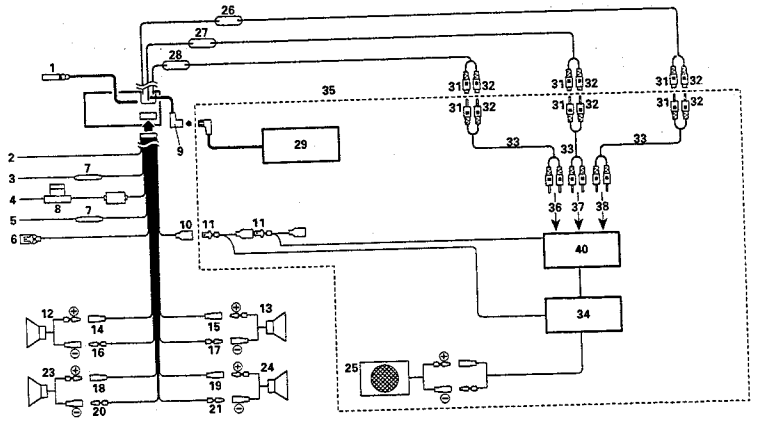


Fig. 9

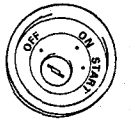
Connecting the Units

Note:

- *This unit is for vehicles with a 12-volt battery and negative grounding. Before installing it in a recreational vehicle, truck, or bus, check the battery voltage.*
- *To avoid shorts in the electrical system, be sure to disconnect the battery ⊖ cable before beginning installation.*
- *Refer to the owner's manual for details on connecting the various cords of the power amp and other units, then make connections correctly.*
- *Secure the wiring with cable clamps or adhesive tape. To protect the wiring, wrap adhesive tape around them where they lie against metal parts.*
- *Route and secure all wiring so it cannot touch any moving parts, such as the gear shift, handbrake, and seat rails. Do not route wiring in places that get hot, such as near the heater outlet. If the insulation of the wiring melts or gets torn, there is a danger of the wiring short-circuiting to the vehicle body.*
- *Don't pass the orange lead through a hole into the engine compartment to connect to the battery. This will damage the lead insulation and cause a very dangerous short.*
- *Do not shorten any leads. If you do, the protection circuit may fail to work when it should.*
- *Never feed power to other equipment by cutting the insulation of the power supply lead of the unit and tapping into the lead. The current capacity of the lead will be exceeded, causing over heating.*
- *When replacing fuse, be sure to use only fuse of the rating prescribed on the fuse holder.*
- *If the RCA pin jacks on the unit are not being used, do not remove the caps attached to the end of the connector.*
- *Since a unique BPTL circuit is employed, never wire so the speaker leads are directly grounded or the left and right speaker ⊖ leads are common.*
- *Speakers connected to this unit must be high-power types possessing minimum rating of 35 W and impedance of 4 to 8 ohms. Connecting speakers with output and/or impedance values other than those noted here can damage the speakers.*
- *When an external power amp is being used with this system, be sure not to connect the blue lead to the amp's power terminal. Likewise, do not connect the blue lead to the power terminal of the auto-antenna. Such connection could cause excessive current drain and malfunction.*
- *To prevent incorrect connection, the input side of the IP-BUS connector is blue, and the output side is black. Connect the connectors of the same colors correctly.*
- *If this unit is installed in a vehicle that does not have an ACC (accessory) position on the ignition switch, the red lead of the unit should be connected to a terminal coupled with ignition switch ON/OFF operations. If this is not done, the vehicle battery may be drained when you are away from the vehicle for several hours.*

ACC position

NO ACC position



Connection Diagram 1 (Fig. 7)

When DSP is not connected

Connection Diagram 2 (Fig. 8)

When connected with "DEQ-P800" Hideaway DSP

Connection Diagram 3 (Fig. 9)

When connected with another DSP than "DEQ-P800" Hideaway DSP or equalizer

1. Antenna jack
2. Black (ground)
   To vehicle (metal) body.
3. Red
   To electric terminal controlled by ignition switch (12 V DC) ON/OFF.
4. Orange
   To terminal always supplied with power regardless of ignition switch position.
5. Yellow
   To lighting switch terminal.
6. Yellow/black
   Cellular Mute
   If you use a cellular telephone, connect it via the Audio Mute lead on the cellular telephone. If not, keep the Audio Mute lead free of any connections.
7. Fuse resistor
8. Fuse holder
9. IP-BUS input (blue)
10. Blue
    To system control terminal of the power amp or Auto-antenna relay control terminal (Max. 300 mA 12 V DC).
11. Blue
12. Front/left speaker
13. Front/right speaker
14. Green
15. Gray
16. Green/black
17. Gray/black
18. Green/red
19. Gray/red
20. Black/green
21. Black/gray
22. With a 2 speaker system, connect to the 2 speakers in the front or the rear.
23. Rear/left speaker
24. Rear/right speaker
25. Subwoofer speaker
26. Gray label (subwoofer output or audio output)
27. Green label (rear output or rear input)
28. White label (front output or front input)
29. Multi-CD player, etc. (sold separately)
30. Use this for connections when you have the separately available amplifier.
31. White
32. Red
33. Connecting cords with RCA pin plugs (sold separately)
34. Power amp (sold separately)
35. DSP system + Subwoofer system + Multi-CD player (sold separately)
36. To the Front output terminal
37. To the Rear output terminal
38. To the Input terminal
39. Hideaway DSP unit "DEQ-P800" (sold separately)
40. Another DSP than "DEQ-P800" Hideaway DSP or equalizer (sold separately)

3. DISASSEMBLY

● Removing the Case (not shown)

1.Remove the two screws.
2.Remove the case.

● Removing the Panel Assy (Fig.10)

1.Remove the two screws A.
2.Disconnect the two stoppers indicated by arrows.
3.Disconnect the two connectors.
4.Remove the panel assy.

● Removing the CD Mechanism Module (Fig.10)

1.Remove the four screws B.
2.Disconnect the connector.
3.Remove the CD mechanism module.

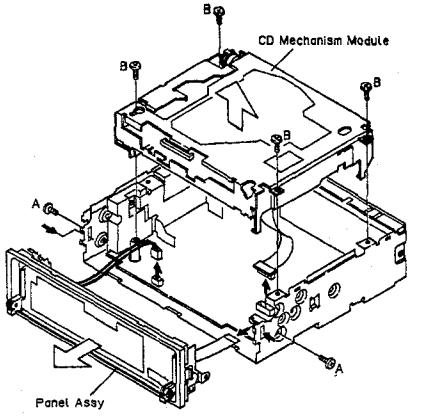
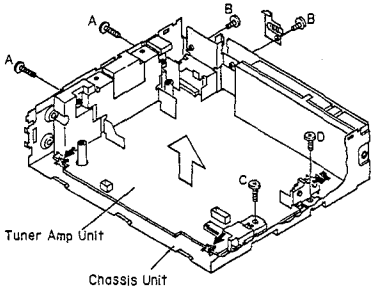


Fig.10

● Removing the Chassis Unit (Fig.11)

1.Remove two screws A, two screws B, a screw C and a screw D.
2.Unbend the tabs at three locations indicated by arrows until straight.
3.Remove the chassis unit.



CAUTION
When testing a P.C.B which has been separated from the chassis unit.
It is necessary to short points A,B together.

Fig.11

4. ADJUSTMENT

4.1 CD PLAYER SECTION

1)Precautions

- This unit uses a single power supply (+5V) for the regulator. The signal reference potential, therefore, is connected to REFO1(approx. 2.5V) instead of GND.
  If REFO1 and GND are connected to each other by mistake during adjustments, not only will it be impossible to measure the potential correctly, but the servo will malfunction and a severe shock will be applied to the pick-up. To avoid this, take special note of the following.
  Do not connect the negative probe of the measuring equipment to REFO1 and GND together. It is especially important not to connect the channel 1 negative probe of the oscilloscope to REFO1 with the channel 2 negative probe connected to GND.
  Since the frame of the measuring instrument is usually at the same potential as the negative probe, change the frame of the measuring instrument to floating status.
  If by accident REFO1 comes in contact with GND, immediately switch the regulator or power OFF.

- Always make sure the regulator is OFF when connecting and disconnecting the various filters and wiring required for measurements.

- Before proceeding to further adjustments and measurements after switching regulator ON, let the player run for about one minute to allow the circuits to stabilize.

- Since the protective systems in the unit's software are rendered inoperative in test mode, be very careful to avoid mechanical and /or electrical shocks to the system when making adjustment.

- Test mode starting procedure
  Switch ACC, back-up ON while pressing the 4 and 6 keys together.

- Test mode cancellation
  Switch ACC, back-up OFF.

- Disc detection during loading and eject operations is performed by means of a photo transistor in this unit.Consequently, if the inside of the unit is exposed to a strong light source when the outer casing is removed for repairs or adjustment, the following malfunctions may occur.
  *During PLAY, even if the eject button is pressed, the disc will not be ejected and the unit will remain in the PLAY mode.
  *The unit will not load a disc.
  When the unit malfunctions this way, either re-position the light source,move the unit or cover the photo transistor.

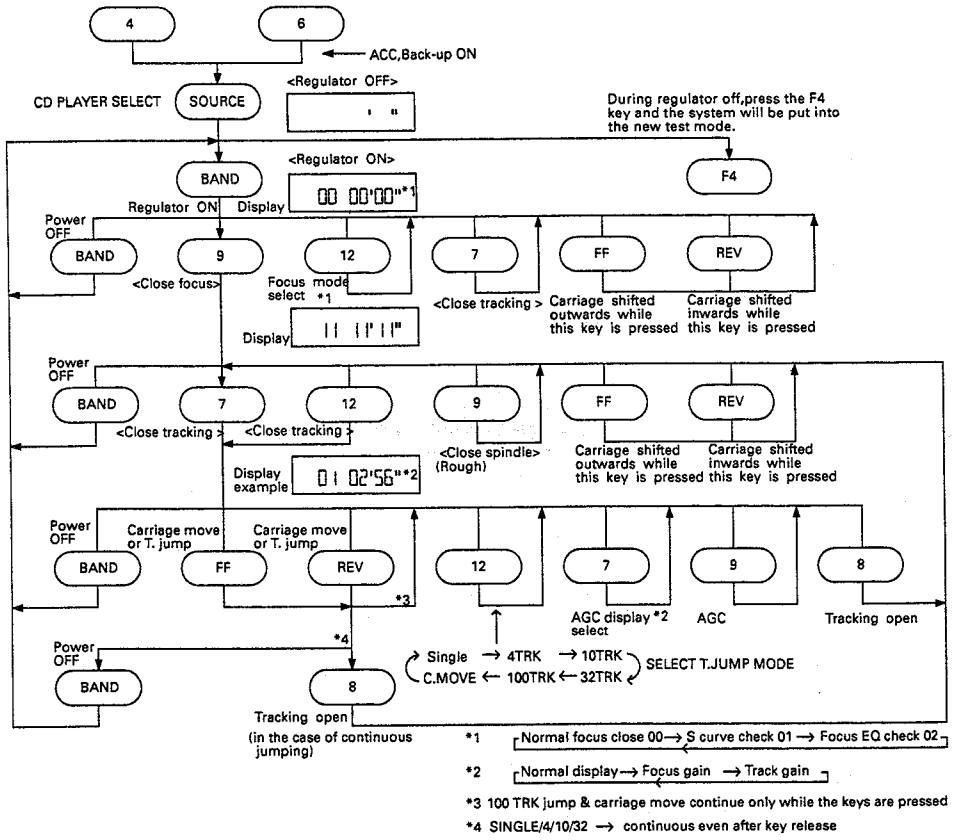
- When loading and unloading discs during adjustment procedures,always wait for the disc to be properly clamped or ejected before pressing another key. Otherwise, there is a risk of the actuator being destroyed.

- Turn power off when pressing the button FF or the button REV key for focus search in the test mode. (Or else lens may stick and the actuator may be damaged.)

- SINGLE/4TRK/10TRK/32TRK will continue to operate even after the key is released.Tracking is closed the moment C-MOVE is released.

- JUMP MODE resets to SINGLE as soon as power is switched off.

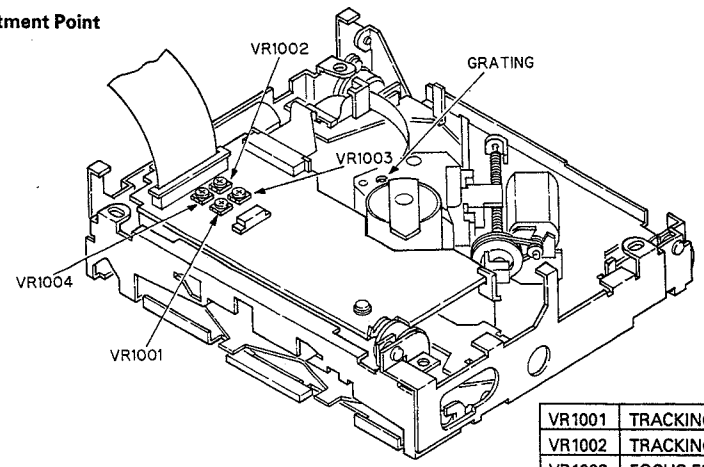
● **Flow Chart**



● Measuring Equipment and Jigs

Adjustment	Measuring equipment & jigs
1 Tracking Error Offset Adjustment 1	DC V Meter Extension cable:GGF1135
2 Grating Check / Adjustment 1	Oscilloscope, ABEX TCD-784, Two L.P.F., Clock Driver Extension cable:GGF1135
3 Grating Adjustment 2	Oscilloscope, Grating Adjustment Filter (B.P.F.), mV Meter, ABEX TCD-784, Two L.P.F., Clock Driver Extension cable:GGF1135
4 Tracking Balance Adjustment 1	Oscilloscope, L. P. F., ABEX TCD-784 Extension cable:GGF1135
5 Focus Bias Adjustment	Oscilloscope, ABEX TCD-784 Extension cable:GGF1135
6 RFO1 Offset Adjustment	Oscilloscope, ABEX TCD-784 Extension cable:GGF1135
7 Tracking Error Offset Adjustment 2	DC V Meter Extension cable:GGF1135
8 Tracking Balance Adjustment 2	Oscilloscope, L. P. F., ABEX TCD-784 Extension cable:GGF1135

● Adjustment Point



VR1001	TRACKING ERROR OFFSET
VR1002	TRACKING BALANCE
VR1003	FOCUS ERROR BIAS
VR1004	RFO1 OFFSET

Fig.12

● Test Point

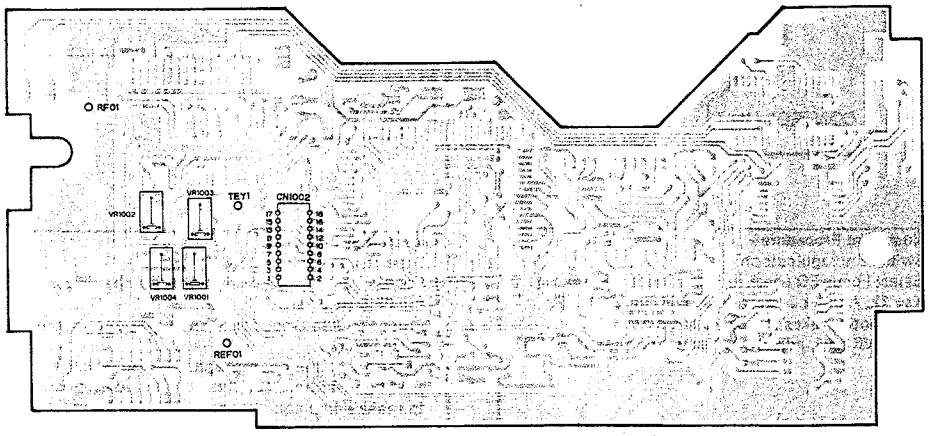
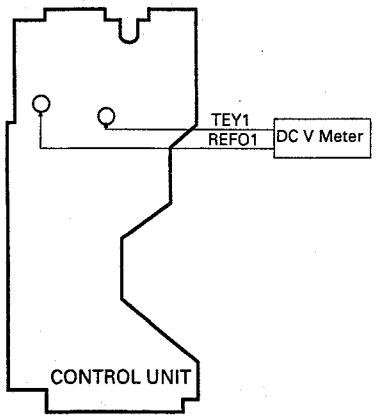


Fig.13

1 Tracking Error Offset Adjustment 1

·**Purpose :**
To adjust the offset of the tracking pre-amp to zero
·**Symptoms of Mal-adjustment :**
Track search NG, Carriage runaway, Poor playability.

·**Measuring Equipment / Jig**	·DC V Meter
·**Measuring Point**	·TEY1
·**Test Disc , Mode**	·TEST MODE
·**Adjustment Point**	·VR1001(TE OFFSET VR)

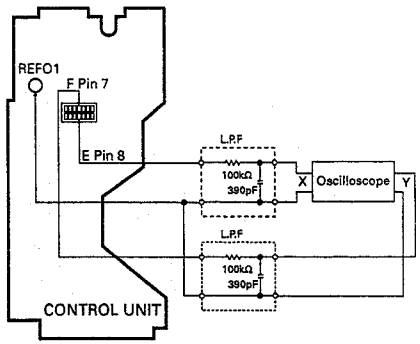


Adjustment Procedure
1.Switch the regulator on.
Select Focus EQ check in Focus mode by pressing Key **12**. And the indication 00 will change to 02. This mode makes the laser turned off.
2.Using VR1001, adjust TEY1 to 0 ± 25mV w.r.t. REFO1.

2 Grating Check / Adjustment 1

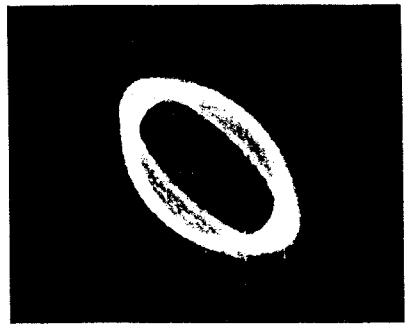
·**Purpose :**
To check that the PU grating is correctly aligned after the PU unit has been replaced
·**Symptoms of Mal-adjustment :**
Unable to play disc, track skip during search, search NG.

·**Measuring Equipment / Jig**	·Oscilloscope, Two L.P.F. ·Clock Driver
·**Measuring Point**	·E, F
·**Test Disc , Mode**	·ABEX TCD-784, TEST MODE
·**Adjustment Point**	·Grating hole



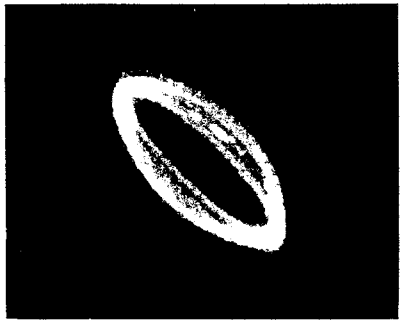
Adjustment Procedure
1.Load disc and switch regulator on.
2.Position the PU unit in the center of the disc using the **FF & REV** keys.
3.Press key **9** to close focus and press once more to close spindle.
4.Referring to the photographs given check that the grating is within ±45°. If not, it should be possible to make a fine adjustment to the grating by slowly tuning the grating screw. If, however during the adjustment the lissajous figure is seen to "FLIP" then the null point must be found and the adjustment made from there(see next section).

Lissajous figure (AC input)
Horizontal axis E 10mV/div.
Vertical axis F 10mV/div.



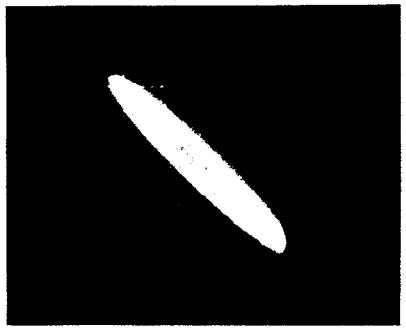
60°=NG

Waveform 1



45°=OK
(Limit)

Waveform 2



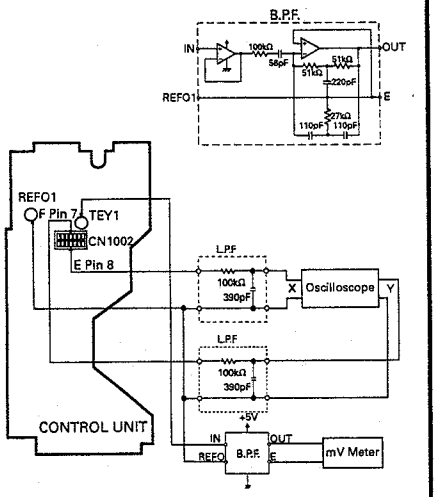
0°=BEST
(Doesn't become a single line due to eccentricity)

Waveform 3

3 Grating Adjustment 2

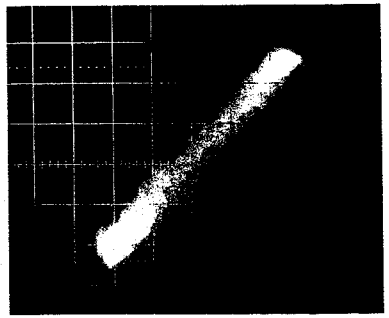
·Purpose :
This needs to be done if the previous adjustment was unsuccessful
·Symptoms of Mal-adjustment :
Unable to play disc, track skipping, track search NG.

·Measuring Equipment / Jig	·Oscilloscope, Grating Adjustment filter (B.P.F.), mV Meter, Two L.P.F., Clock Driver
·Measuring Point	·TEY1, E, F
·Test Disc , Mode	·ABEX TCD-784, TEST MODE
·Adjustment Point	·Grating hole



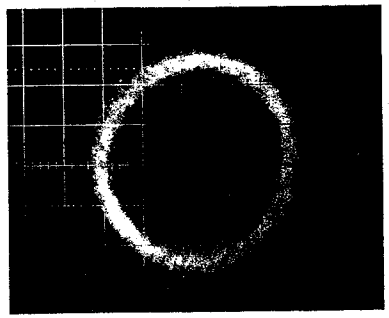
Adjustment Procedure
1.Load disc and switch regulator on.
2.Position the PU unit in the center of the disc using the **FF** & **REV** keys.
3.Press key **9** to close focus and press once more to close spindle.
4.While monitoring the output of the B.P.F. connected to TEY1, slowly turn the grating screw. The output voltage should pass through many minimums; search for the minimum which is clearly smaller than the rest - this is the "null point", where the E & F sub-beams are lined up with the tracks on the disc.
5.From this null point, turn the grating screw clockwise (as seen from the underside of the PU unit) until the lissajous waveform is a single line (or close as possible) as shown in the photograph.

Lissajous figure (AC input)
Horizontal axis E 10mV/div.
Null Point=180° Vertical axis F 10mV/div.



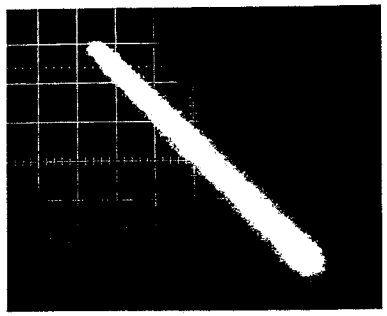
Waveform 4

"Rough" adjustment=90°



Waveform 5

Final adjustment=0°

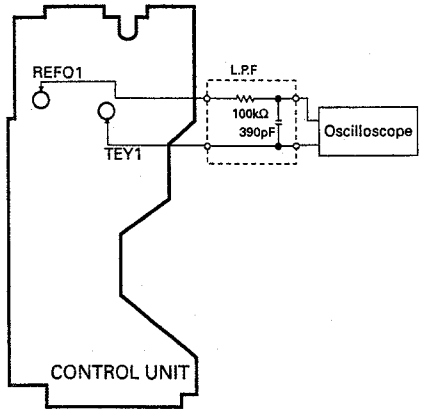


Waveform 6

4 Tracking Balance Adjustment 1

·Purpose :
To equate the sensitivity of the F channel to that of the E channel
·Symptoms of Mal-adjustment :
Track search NG, Poor playability carriage runaway.

·Measuring Equipment / Jig	·Oscilloscope, L.P.F.
·Measuring Point	·TEY1
·Test Disc , Mode	·ABEX TCD-784, TEST MODE
·Adjustment Point	·VR1002 (T.BAL)

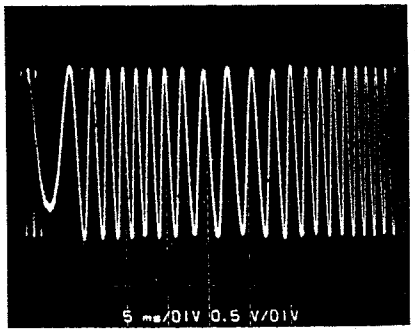


Adjustment Procedure
1.Load disc and switch the regulator on.
2.Position the PU unit in the center of the disc using the **FF** & **REV** keys.
3.Close focus by pressing key **9**.
4.Observing the TEY1 waveform on the oscilloscope, adjust VR1002 until the positive and negative halves have the same amplitude (see waveform 7–9).
Check
After adjustment the TEY1 waveform should have an amplitude of 1.5±0.65 Vpp.(ABEX TCD-784)
(Providing focus bias is OK)

DC Mode
0.5V/div.
5ms/div.

+5% NG

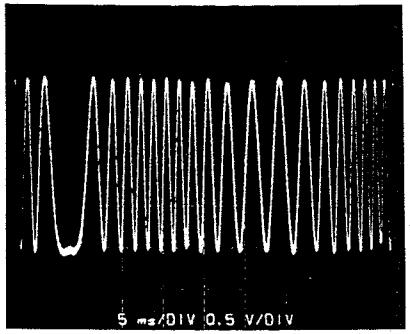
REFO1→



Waveform 7

±0% OK

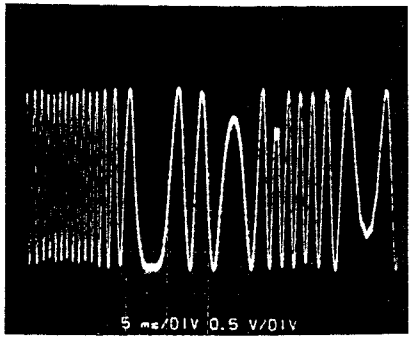
REFO1→



Waveform 8

-5% NG

REFO1→

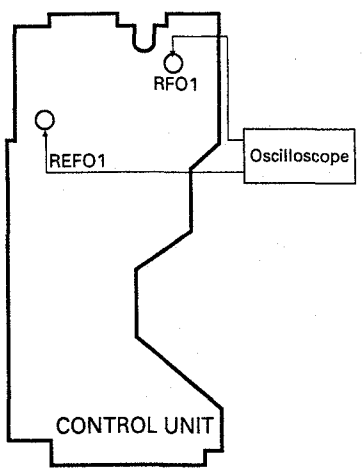


Waveform 9

5 Focus Bias Adjustment

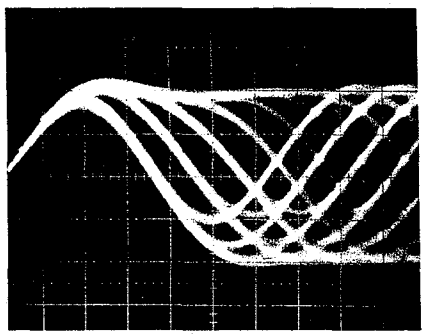
·Purpose :
To adjust the focus servo reference so that the RF waveform is an optimum.
·Symptoms of Mal-adjustment :
Difficulty in closing focus, poor playability.

·Measuring Equipment / Jig	·Oscilloscope
·Measuring Point	·RFO1
·Test Disc , Mode	·ABEX TCD-784, NORMAL MODE
·Adjustment Point	·VR1003 (FE BIAS VR)



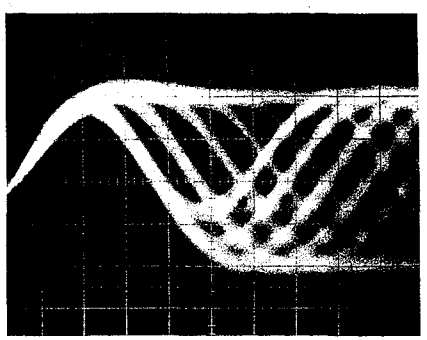
Adjustment Procedure
1. Play track number 18.
2. Adjust VR1003 so that the RFO1 waveform amplitude is a maximum and eye pattern is optimum.

Check
After adjustment the RFO1 waveform should have an amplitude of 1.7±0.65 Vpp.(ABEX TCD-784)



OK

Waveform 10



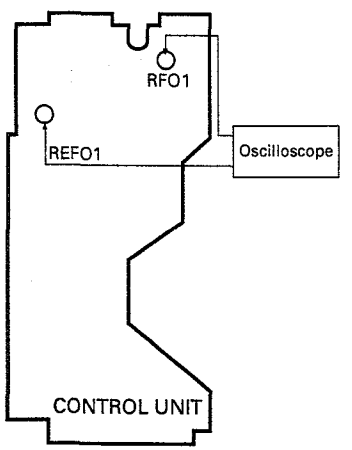
AC Mode Before adjustment Waveform 11

DEH-P815,P815RDS,P813

6 RFO1 Offset Adjustment

·Purpose
To adjust the RFO1 waveform offset to an optimum.
·Symptoms of Mal-adjustment
Difficulty in closing focus, poor playability.

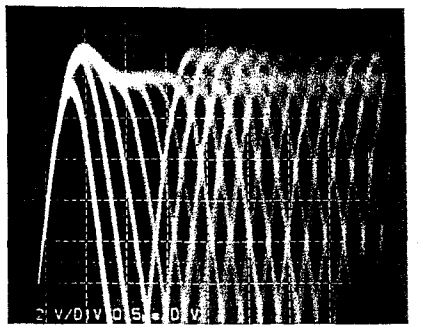
·Measuring Equipment / Jig	·Oscilloscope
·Measuring Point	·RFO1
·Test Disc , Mode	·ABEX TCD-784, NORMAL MODE
·Adjustment Point	·VR1004 (RFO1 OFFSET VR)



Adjustment Procedure
1. Play track number 18.
2. Adjust VR1004 so that the peak value of the upper envelope of the RFO1 waveform is at +1.1VDC w.r.t. REFO1 (See waveform 12–14).

DC Mode
0.2V/div.
0.5µs/div.

+100mV NG

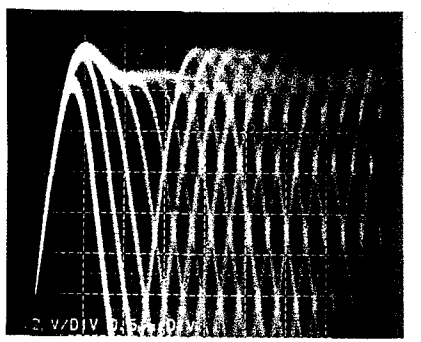


REFO1→

Waveform 12

OK

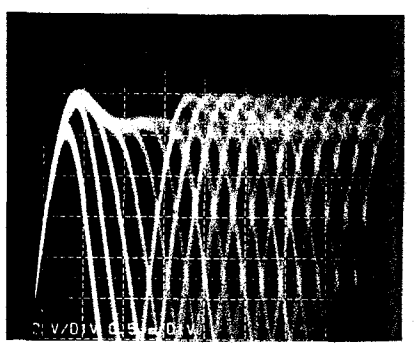
1.1V



REFO1→

Waveform 13

-100mV NG



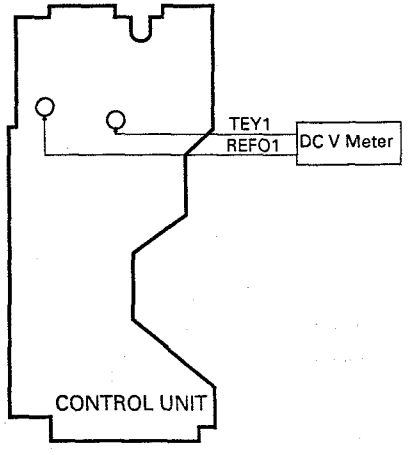
REFO1→

Waveform 14

7 Tracking Error Offset Adjustment 2

·**Purpose :**
To check the offset of the tracking pre-amp is zero and adjust if necessary.
·**Symptoms of Mal-adjustment :**
Track search NG, Carriage runaway, Poor playability.

·**Measuring Equipment / Jig**	·DC V Meter
·**Measuring Point**	·TEY1
·**Test Disc , Mode**	·TEST MODE
·**Adjustment Point**	·VR1001(TE OFFSET VR)

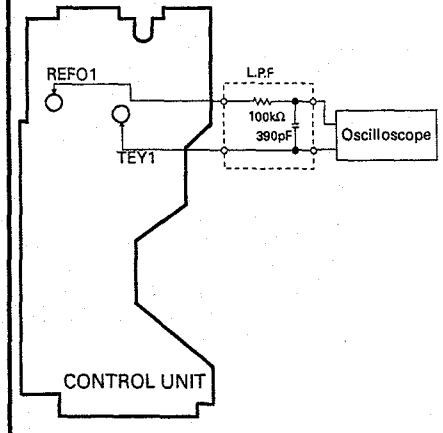


Adjustment Procedure
1.Switch the regulator on.
Select Focus EQ check in Focus mode by pressing Key **12**. And the indication 00 will change to 02. This mode makes the laser turned off.
2.Using VR1001, adjust TEY1 to 0 ± 25mV w.r.t. REFO1.

8 Tracking Balance Adjustment 2

·**Purpose :**
To equate the sensitivity of the F channel to that of the E channel.This needs only be done if the TE OFF-SET volume was re-adjusted in the previous step
·**Symptoms of Mal-adjustment:**
Track search NG,Poor playability, carriage runaway.

·**Measuring Equipment / Jig**	·Oscilloscope, L.P.F.
·**Measuring Point**	·TEY1
·**Test Disc , Mode**	·ABEX TCD-784, TEST MODE
·**Adjustment Point**	·VR1002 (T.BAL)



Adjustment Procedure
1.Load disc and switch the regulator on.
2.Position the PU unit in the center of the disc using the **FF** & **REV** keys.
3.Close focus by pressing key **9**.
4.Observing the TEY1 waveform on the oscilloscope, adjust VR1002 until the positive and negative halves have the same amplitude (See waveform 7–9).
Check
After adjustment the TEY1 waveform should have an amplitude of 1.5±0.65 Vpp.(ABEX TCD-784)

4.1 TUNER SECTION

● **Connection Diagram**

NOTE:
Select C1 so that total capacity of 80pF is attained from the direction of the receiver jack.
Z: Output impedance of SSG.

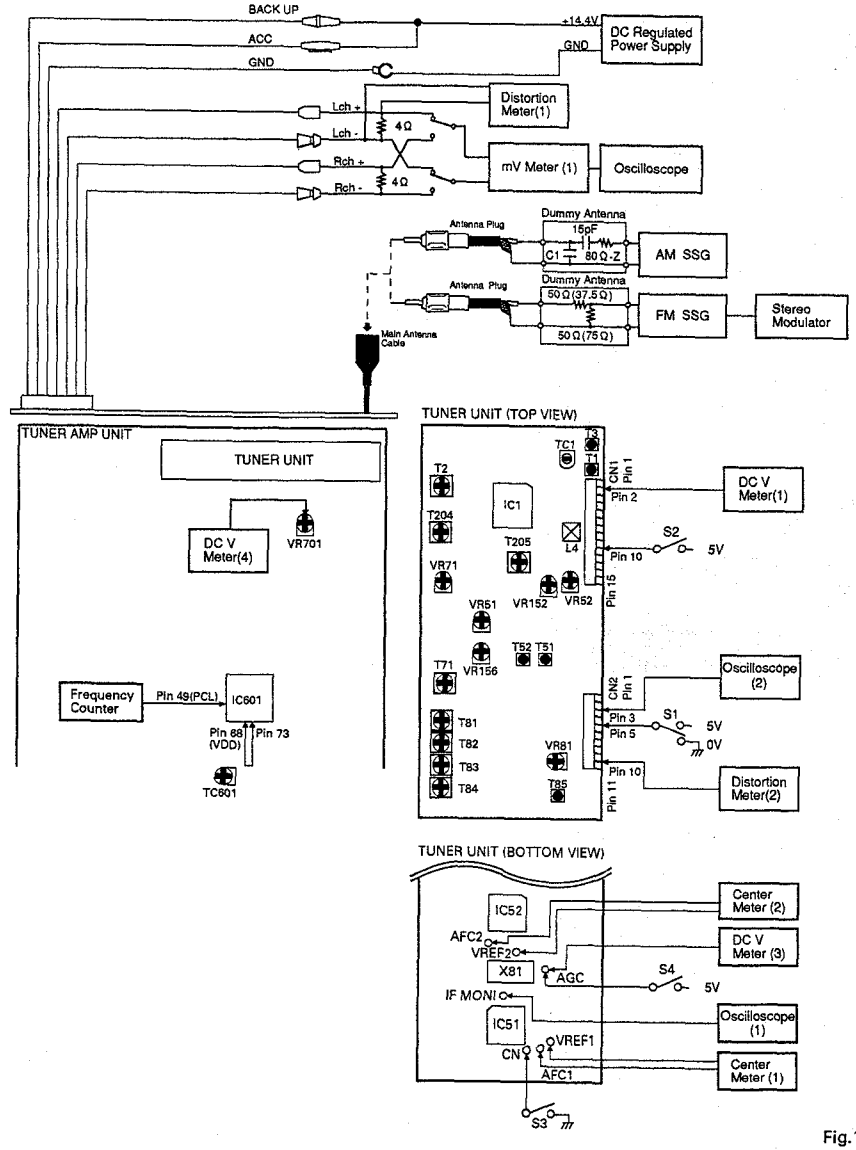


Fig.14

● DEH-P815/UC,DEH-P813/ES

AM ADJUSTMENT (ES Model tuning steps at 10kHz)

	No.	AM SSG(400Hz,30%) Frequency(kHz)	AM SSG(400Hz,30%) Level(dBμV)	Displayed Frequency(kHz)	Adjustment Point	Adjustment Method (Switch Position)
IF	1	1000	20	1000	T204,T205	mV Meter(1) : Maximum

FM ADJUSTMENT

Modulation M:MONO MOD., 400Hz 100%(75kHz Dev.)
S:STEREO MOD., 1kHz, L or R=30%(20.25kHz+7.5kHz Dev.)

NOTE:Before proceeding to further adjustments after switching power ON, let the tuner run for ten minutes to allow the circuits to stabilize.

	No.	FM SSG Frequency(MHz)	FM SSG Level(dBf)	Displayed Frequency(MHz)	Adjustment Point	Adjustment Method (Switch Position)
TUN Volt	1	·····	·····	108.0	L4	DC V Meter(1) : 6.5V±0.1V
IF	1	98.1 M	65	98.1	T51	Center Meter(2) : 0 (S1:0V)
	2	98.1 M	65	98.1	T52	Distortion Meter(1) : Minimum (S1:0V)
	3	Repeat No.1–2 alternately so that the center meter indicates the 0 output and distortion meter indicates the minimum output.				
ANT,RF	1	89.9 M	5–15	89.9	T1,T3	(S1:0V)
IFT	1	98.1 M	5–15	98.1	T2	mV Meter(1) : Maximum (S1:0V)
IHF	1	98.1 M	13	98.1	T71	mV Meter(1) : Maximum (S1:0V)
MaxSep	1	98.1 S	65	98.1	VR152	mV Meter(1) : Separation Maximum (S1:0V)
Soft Mute	1	98.1 M	65	98.1	·····	mV Meter(1) : A(0dB)(STEREO MODE)
	2	98.1 M	15	98.1	VR156	mV Meter(1) : A-3dB
ARC	1	98.1 S	40	98.1	VR52	mV Meter(1) : Separation 5dB±3dB (STEREO MODE)
SD	1	98.1 S	22	98.1	VR51	Oscilloscope(2) : Approx. 3V(S2:5V)

● DEH-P815RDS/EW

MW/LW ADJUSTMENT

	No.	AM SSG(400Hz,30%) Frequency(kHz)	AM SSG(400Hz,30%) Level(dBμV)	Displayed Frequency(kHz)	Adjustment Point	Adjustment Method (Switch Position)
IF	1	999	20	999	T204,T205	mV Meter(1) : Maximum

FM ADJUSTMENT

Modulation M:MONO MOD., 400Hz 100%(75kHz Dev.)
S:STEREO MOD., 1kHz, L or R=30%(20.25kHz+7.5kHz Dev.)

NOTE:Before proceeding to further adjustments after switching power ON, let the tuner run for ten minutes to allow the circuits to stabilize.

	No.	FM SSG Frequency(MHz)	FM SSG Level(dBf)	Displayed Frequency(MHz)	Adjustment Point	Adjustment Method (Switch Position)
TUN Volt	1	·····	·····	108.0	L4	DC V Meter(1) : 6.5V±0.1V
IF	1	98.1 M	65	98.1	T85	Center Meter(1) : 0 (S1:0V)
	2	98.1 M	65	98.1	T51	Center Meter(2) : 0 (S1:0V)
	3	98.1 M	65	98.1	T52	Distortion Meter(2) : Minimum (S1:0V)
	4	Repeat No.2–3 alternately so that the center meter indicates the 0 output and distortion meter indicates the minimum output.				
ANT,RF	1	106.1 M	5–15	106.1	TC1	mV Meter(1) : Maximum
	2	89.9 M	5–15	89.9	T1,T3	(S1:0V)
	3	Repeat No.1–2 alternately so that the mv meter indicates the maxmum output.				
IMAGE	1	129.3 M	70–90	107.9	TC1	mV Meter(1) : Minimum (S1:0V)
IFT	1	98.1 M	5–15	98.1	T2	mV Meter(1) : Maximum (S1:0V)
IHF	1	98.1 M	13	98.1	T71	mV Meter(1) : Maximum (S1:0V)
MaxSep	1	98.1 S	65	98.1	VR152	mV Meter(1) : Separation Maximum (S1:0V)
ST,THD	1	98.1 S	65	98.1	T71	mV Meter(1) : Minimum (S1:0V)
MaxSep	1	98.1 S	65	98.1	VR152	mV Meter(1) : Separation Maximum (S1:0V)
Dynas Filter	1	98.1 M	50	98.1	T83,T84	Oscilloscope(1) : Maximum (S1:5V) (S3:ON) (S4:5V)
	2	118.1 M	50	118.1	T81	
	3	78.1 M	50	78.1	T82	
IF Gain	1	98.1 M	14	98.1	VR71	DC V Meter(3) : 4V±0.1V S1:0V(Gnd),S2:0V(OFF), S3:0V(ON),S4:0V(OFF)
Soft Mute	1	98.1 M	65	98.1	·····	mV Meter(1) : A(0dB)(STEREO MODE)
	2	98.1 M	15	98.1	VR81	mV Meter(1) : A-3dB
ARC	1	98.1 S	40	98.1	VR52	mV Meter(1) : Separation 5dB±3dB (STEREO MODE)
SD	1	98.1 S	22	98.1	VR51	Oscilloscope(2) : Approx. 3V(S2:5V)

CLOCK ADJUSTMENT

No.	Adjustment Point	Adjustment Method Point
1		Pin73 of IC601 connect to 5V
2	TC601	Frequency Counter : 1.048576MHz±2Hz

● DEH-P815RDS/EW

RDS SL ADJUSTMENT

No.	FM SSG		Displayed	Adjustment	Adjustment Method
	Frequency(MHz)	Level(dBf)	Frequency(MHz)	Point	(Switch Position)
1	98.1 S	45	98.1	VR701	DC V Meter(4) : 1.75V±0.05V

● ID-Logic Service Mode(DEH-P815/UC)

• How to enter into the ID-logic service mode
While pressing keys 4 and 6 at a time, press the back-up ON or clear button ON.
Change to tuner mode.

Key	Display
7	Date of ROM version
8	Copyright information
9	User information
10	User code

• Resetting the ID-logic service mode
Press the clear button ON this unit. Or turn off this unit back-up and wait for about one minute.

● Error Numbers And New Test Mode

● Indicating An Error Number

If the CD should fail to operate in CD multi player or if an error has taken place during the operation and resulted in an error, the player will enter into the error mode. And the cause of such error is numerically indicated.
This is armed at assisting an analysis or repair.

(1) Basic Means of Display

·With ERROR indicated in "MODE" on IP-BUS Display date, an error code is transmitted by the use of MIN and SEC. Identical date are transmitted with MIN and SEC.
·Examples of Display ERROR-XX

(2) Error Codes

Error Code	Classification	Description	Cause/Detail
10	ELECTRIC	Carriage home failure	Carriage doesn't move to or from the innermost position →Home switch failed and/or carriage immobile
11	ELECTRIC	Focus failure	Focus failed →Defects, disc upside-down, severe vibration
12	ELECTRIC	SETUP failure Subcode failure	Spindle failed to lock or subcode unreadable →Spindle defective, defect, severe vibration
14	ELECTRIC	Mirror failure	Unrecorded CD-R The disc is upside-down, defects, vibration
17	ELECTRIC	Set up failure	AGC protect failed →Defects, disc upside-down, severe vibration
30	ELECTRIC	Search time out	Failed to reach target address →Carriage/tracking defective and/or defects
A0	SYSTEM	Power failure	Power overvoltage or short circuit detected →Switching transistor defective and/or power abnormal
50	MECHANISM	An error upon ejection	MAG switch release time has time out Elevation time out when eject
60	MECHANISM	An error while putting in and out the tray	Tray in / out time has time out Tray is caught when put in
70	MECHANISM	An error upon elevation	Elevation time has time out
80	MECHANISM	An error with an empty magazine inserted	No disc is available

* Setup means a series of operations after focusing up to sound output.

● New Test Mode(aging operation and setup analysis)

The single CD player plays in normal mode. After being set up, it will display FOK (focus), LOCK (spindle), subcode, sound skip, protection against a mechanical error or the like, occurrence of an error, cause and time of an expiry, if any, (and disc number)
During the setup, the CD software operation status (internal RAM and C-point)is displayed.

(1) How to enter NEW TEST Mode

See the test mode flow chart Page 23.

(2) Relations of keys between TEST and NEW TEST Modes

Keys	Test Mode		New Test Mode	
	Regulator OFF	Regulator ON	PLAY in progress	Error Occurred, Protection Activated
BAND	Regulator ON	Regulator OFF	—	Time of occurrence / cause of error select
FF	—	FWD-Kick	TRACK UP / FF	—
REV	—	REV-Kick	TRACK DOWN /REV	—
7	—	Tracking close	RPT	—
8	—	Tracking open	RANDOM	—
9	—	Focus close	ITS	—
12	To New Test Mode	Focus Mode Select	PAUSE	—

Operations, such as EJECT, CD ON/OFF, etc. are performed normally.

(3) Error Cause (Error Number) Code

Error Code	Classification	Mode	Description	Cause	Detail
40	ELECTRIC	PLAY	FOK=L 100ms	Put out of focus	Scratch, Stain, Vibration, Servo defect, etc...
41	ELECTRIC	PLAY	LOCK=L 150ms	Spindle unlock	
42	ELECTRIC	PLAY	Subcode unacceptable 500ms	Failed to read subcode	
43	ELECTRIC	PLAY	Sound skipped	Last address memory operated	

(4) Indicating an Operation Status During Setup

Status No.	Description	Protection operation
01	Carriage home mode started	None
02	Carriage moving inwards	10-second time out, Home switch failed
03	Carriage moving outwards	10-second time out, Home switch failed
05	Carriage moving outwards	None
11	Setup started	None
12	Spindle turn/Focus search started	None
13	Waiting for focus closure (XSI=L)	Failure to close focus
10,14	Waiting for focus closure (FOK=H)	Failure to close focus
15, 16, 17	Focus closed, Tracking open	Focus disrupted
18	During focus AGC Subcode waiting	Focus disrupted
19	During tracking AGC	Disrupted focus
20	Waiting for MIRR, LOCK or subcode read Carriage closed, SPINDLE=ADAPTIVE	Focus disrupted, MIRR NG, Failure to lock, Failed to read subcode

(5) Example of Display

·SET UP in progress

TNo.	Min	Sec
11	11	11

·Operation (PLAY, SEARCH, etc.) in progress perfectly identical with that in the normal mode.

·Protection/Error upon occurrence
(a) Error number indicated

ERROR-xx

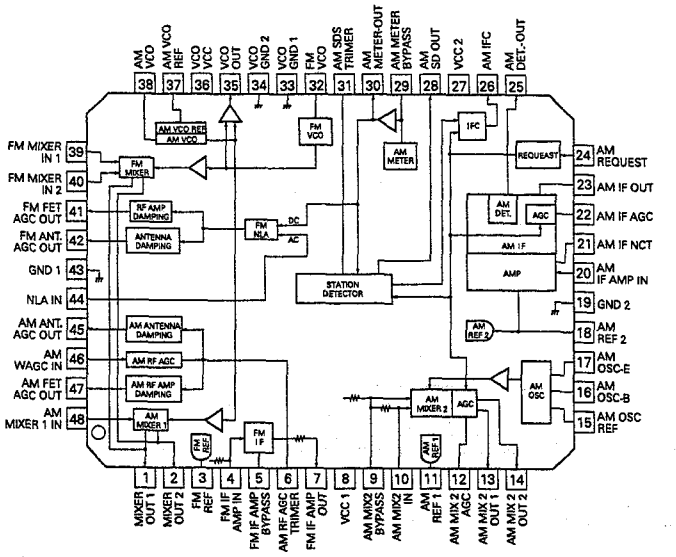
Select the display with the BAND key.

(b) Track number and absolute time indicated

TNo.	Min	Sec
10	40	05

● **ICs**

PA2021B



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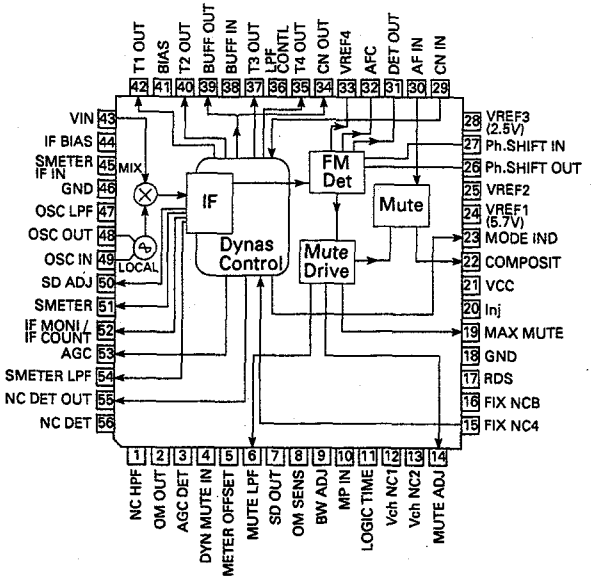

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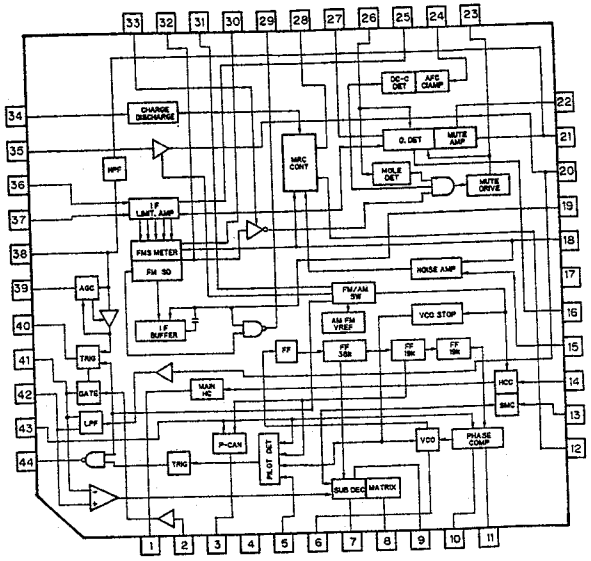
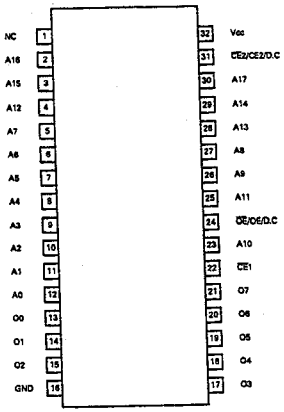
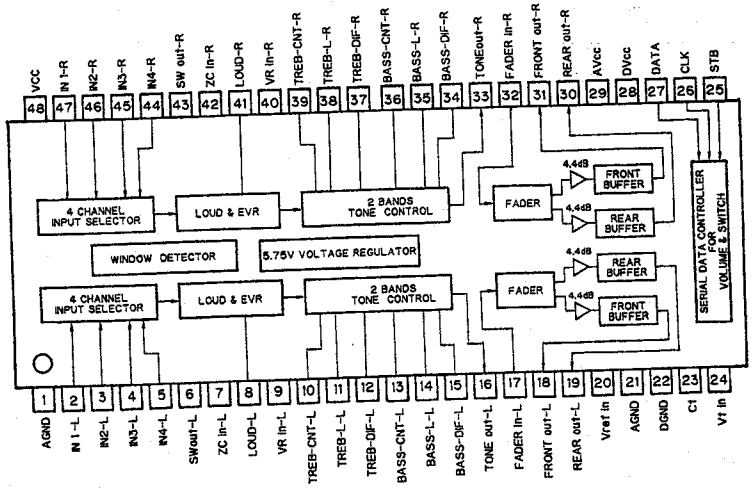


PD4565A



A0-A17 : Address input
O0-O7 : Data output
CE1,CE2 : Chip enable input
OE : Output enable input
Vcc : Power supply
GND : GND
NC : No connection

SN761025DL



● **Pin Functions(PD4557A,PD4561A)**

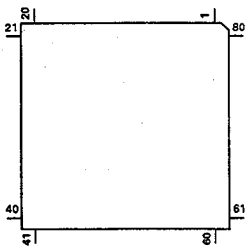
Pin No.	Pin Name	I/O	I/O Format	Function and Operation
1	$\overline{\text{RIDRST}}$	O	C	Reset output
2	RIDSEL	O	C	Select output
3	NC			Not used
4	AVSS			A/D converter GND
5	RIDRDY	I		Ready input
6	VCAVOL	O	C	Analog output
7	AVREF1			D/A converter reference voltage
8	KYDT	I		Key data input
9	DPDT	O	C	Display data output
10	SWVDD	O	C	Grille power supply control output
11	RIDDI	I		Communication data input
12	RIDDO	O	C	Communication data output
13	$\overline{\text{RIDCK}}$	O	C	Communication clock output
14	$\overline{\text{BRST}}$	O	C	P-BUS reset output
15	$\overline{\text{BRXEN}}$	I/O	C	P-BUS enable input/output
16	$\overline{\text{BSRQ}}$	I	C	P-BUS serial pole request input
17	BSIO	I/O	C	P-BUS serial data input/output
18	$\overline{\text{BSCK}}$	I/O	C	P-BUS serial clock input/output
19	$\overline{\text{CDRST}}$	O	C	Reset for CD mechanism module
20	$\overline{\text{ADPW}}$	O	C	A/D converter reference voltage
21–28	NC			Not used
29	PDI	I		PLL data input
30	PCK	O	C	PLL clock output
31	PDO	O	C	PLL data output
32	PCE	O	C	PLL chip enable output
33	VSS			GND
34	MONO	O	C	Forced mono output
35	$\overline{\text{AM}}$/FM	O	C	$\overline{\text{AM}}$/FM select output
36	NCB	O	NH	DYNAS filter fix output
37	SUBW0	O	NH	Sub woofer control 0
38	SUBW1	O	NH	Sub woofer control 1
39	$\overline{\text{CDPW}}$	O	NH	CD/Tuner select
40	$\overline{\text{TUNPW}}$	O	C	Tuner power control output
41	ASENB	O	C	Slave power supply control output
42	$\overline{\text{BUSMUTE}}$	O	C	BUS mute output
43	$\overline{\text{TMUTE}}$	O	C	Tuner mute output
44	NC			Not used
45	PEE	O	C	Beep tone output
46	$\overline{\text{MUTE}}$	O	C	Mute output
47	SYSPW	O	C	System power supply control output
48	ANTFIX	O	NH	Tuner diversity fix select output
49	PCL	O	C	Clock adjustment output
50	LCDPW	O	C	LCD power supply control output
51	DIM	O	C	Dimmer select output
52	ILMPW	O	C	Illumination power supply control output
53	$\overline{\text{CSENS}}$	I		Flap close sense input
54	$\overline{\text{ISENS}}$	I		Illumination sense input
55	PRSBSW	I		PRE OUT/SUB WOOFER select input
56	TX	O	C	IP-BUS data output
57	RX	I		IP-BUS data input
58	$\overline{\text{IPPW}}$	O	C	IP-BUS driver power supply control output
59	SD	I		SD input
60	$\overline{\text{RESET}}$	I		Reset input
61	TELIN	I		Telephone mute input
62	$\overline{\text{BSENS}}$	I		Back up power sense input
63	$\overline{\text{ASENS}}$	I		ACC power sense input
64	$\overline{\text{DSENS}}$	I		Grille detach sense
65	VST	O	C	Strobe pulse output for electronic volume

Pin No.	Pin Name	I/O	I/O Format	Function and Operation
66	VDT	O	C	Data output for electronic volume
67	VCK	O	C	Clock output for electronic volume
68	VDD			Power supply
69	X2			Crystal oscillator connection pin
70	X1			Crystal oscillator connection pin
71	IC			GND
72	XT2			Not used
73	TESTIN	I		Test program mode input
74	AVDD			A/D converter analog power supply
75	AVREF0			GND
76	SL	I		Signal level input
77	SSLEV	I		SS select level input
78	SEL1	I		Destination sense
79	LEVL	I		Audio Lch level input
80	LEVR	I		Audio Rch level input

I/O Format	Meaning
C	C MOS
NH	High resistivity N channel open drain

IC's marked by are MOS type.*
Be careful in handling them because they are very liable to be damaged by electrostatic induction.

*PD4557A,PD4561A



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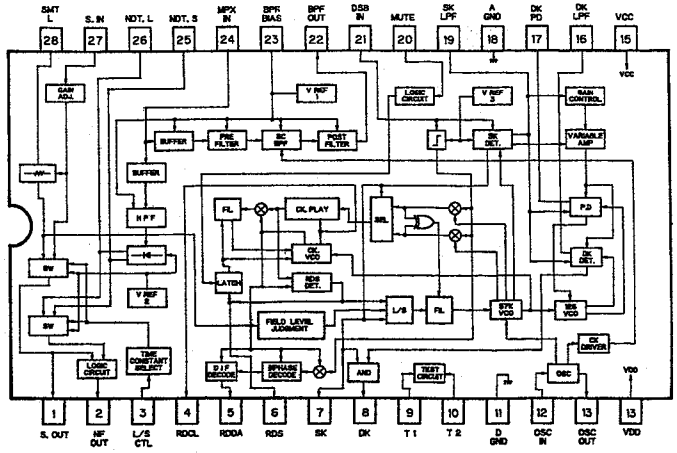

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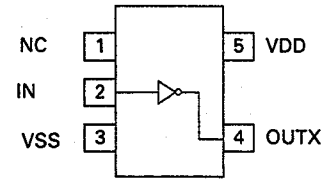
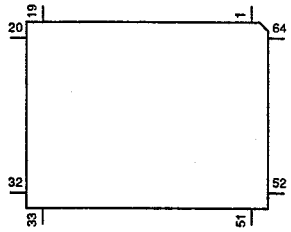


● **Pin Functions(PD6154B)**

Pin No.	Pin Name	I/O	I/O Format	Function and Operation
1–3	NC			Not used
4	GND			GND
5–8	NC			Not used
9–11	ADD13-15	O	N	ROM address
12	AVCC			Analog power supply
13	AVR			5V power supply
14	AVSS			GND
15	IDSEL	I		Select input
16–19	NC			Not used
20	RST	I		Reset input
21	MOD0			GND
22	MOD1			GND
23	XIN	I		Crystal oscillating element connection pin
24	XOUT	O		Crystal oscillating element connection pin
25	VSS			GND
26–29	NC			Not used
30	$\overline{WE}$	O	C	Output enable input
31	$\overline{ROMEN}$	O	C	ROM enable
32,33	ADD17-16	O	C	ROM address output
34–41	ADD7-0	O	C	ROM address output
42–49	DT7-0	I		ROM data input
50	VSS			GND
51	TEST	I		Test terminal
52	IDCLK	I		Communication clock input
53	IDDTO	O	C	Communication data output
54	IDDTI	I		Communication data input
55	IDRDY	O	C	Communication ready output
56	TUNSEL	I		FM/AM tuner unit select input
57	VCC			5V
58	SDIN	I		SD signal input
59	NC			Not used
60–64	ADD8-12	O	N	ROM address

*PD6154B



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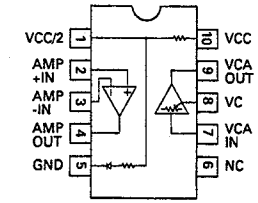
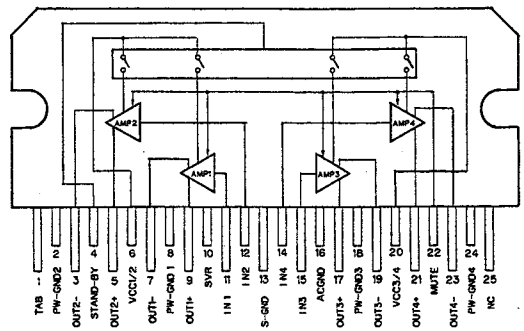


I/O Format	Meaning
C	C MOS
N	N channel open drain

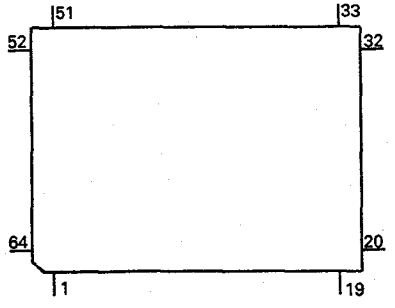
PAL003A



● **Pin Functions(PD6147A)**

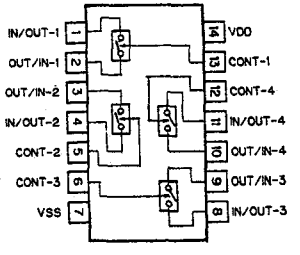
Pin No.	Pin Name	I/O	I/O Format	Function and Operation
1–3	NC			Not used
4	SLIN	I		Signal level input
5	NL	I		Noise level input
6	FL	I		Filter mode input
7	$\overline{DK}$	I		DK signal input
8	NCB	O	N	Filter fix output
9–11	NC			Not used
12	AVCC			Analog power supply
13	AVR			5V power supply
14	AVSS			GND
15	RISEL	I		Select input
16	RCK	I		RDS demodulation clock input
17	RDT	I		RDS demodulation data input
18	$\overline{RDSLK}$	I		RDS LK signal input
19	$\overline{SK}$	I		SK signal input
20	RIRST1	I		Reset input
21	MOD0			GND
22	MOD1			GND
23	XIN	I		Crystal oscillating element connection pin
24	XOUT	O	C	Crystal oscillating element connection pin
25	VSS			GND
26	$\overline{DRST}$	O	C	Decoder reset output
27	LS		C	Sensitivity of noise level select
28	NC			Not used
29	RECIVE	O	C	During RDS data reception output
30–49	NC			Not used
50	VSS			GND
51	RITEST	I		Test terminal
52	$\overline{RICK}$	I		Communication clock input
53	RIDI	O	C	Communication data output
54	RIDO	I		Communication data input
55	RIRDY	O	C	Communication ready output
56	CNTSEL			GND
57	VCC			5V
58	SD	I		SD signal input
59	MDSENS	I		Modulation detect input
60–64	NC			Not used

*PD6147A



I/O Format	Meaning
C	C MOS
N	N channel open drain

BU4066BCFV



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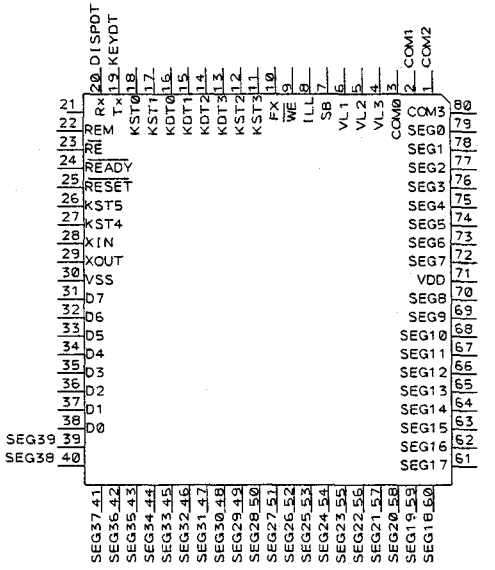

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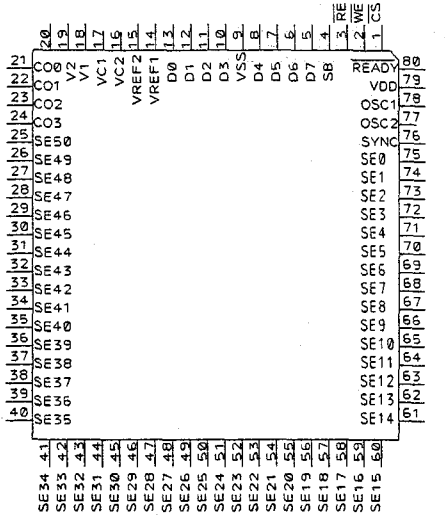

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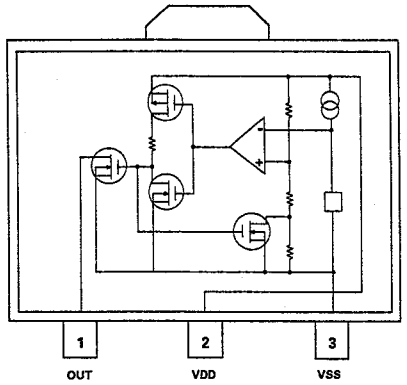

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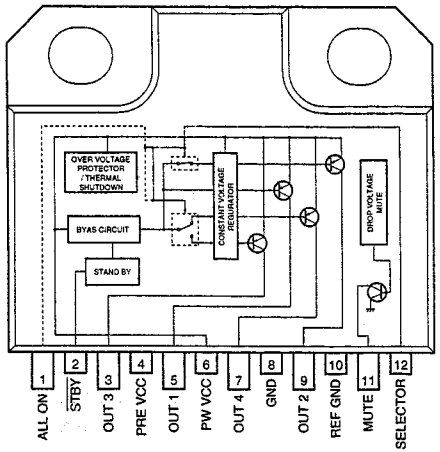

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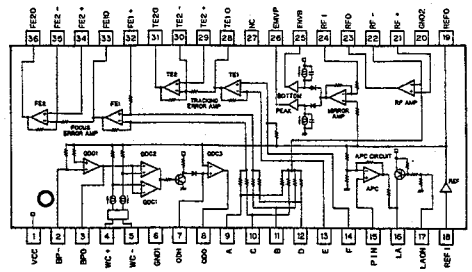

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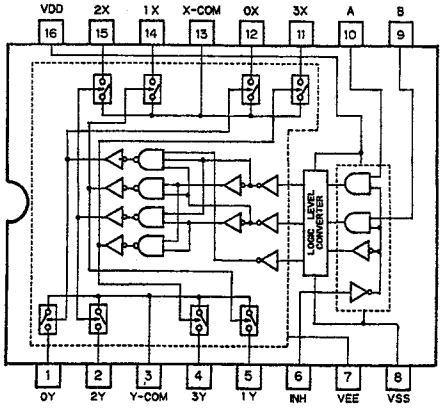
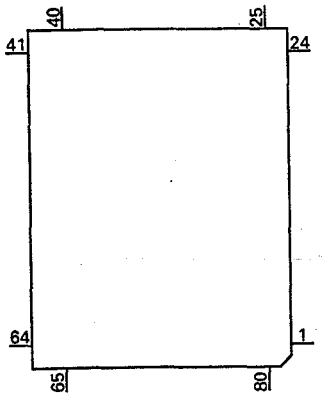


● **Pin Functions(UPD63700GF1)**

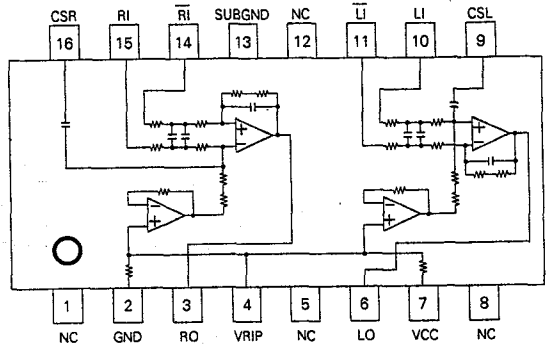
Pin No.	Pin Name	I/O	Function and Operation
1	D.GND		Logic circuit GND
2	RFOK	O	RFOK detection signal output terminal
3	MIRR	O	MIRR detection signal output terminal
4	TBC	I	Tracking filter bank switching terminal
5	HOLD	I	Hold control signal input terminal
6	D.VDD		VDD for logic circuit
7	$\overline{RST}$	I	System reset
8	AO	I	Control signal distinguishing data from microcomputer
9	$\overline{STB}$	I	Signal latching serial data inside LSI
10	$\overline{SCK}$	I	Clock input terminal for serial data input and output
11	SO	O	Serial data and status signal output
12	SI	I	Serial data input
13	TM2	I	Double speed playback control terminal
14	D.GND		Logic circuit GND
15	TEST	I	Test terminal
16	STBY	I	Stand-by input terminal
17	CTLV	I	Control terminal for clock generation VCO used by digital PLL in double speed playback mode
18	POUT	O	Output terminal for phase comparison between EFM signal and bit clock
19	D.GND		Logic circuit GND
20	VCO	I	Inverter input
21	$\overline{VCO}$	O	Inverter output
22	D.VDD		VDD for logic circuit
23	PLCK	O	Bit clock monitor terminal
24	LOCK	O	"H" when synchronization signal and frame counter output coincide at EFM demodulator
25	WFCK	O	Signal issuing one-frame period by bit clock dividing signal
26	RFCK	O	Oscillation clock divider signal,output pin for signal giving 1-frame sync.
27	C4M	O	Output terminal for signal having four the frequency of LRCK
28	C16M	O	Oscillation clock output terminal
29	D.GND		Logic circuit GND
30	XTAL	I	Oscillation continuation terminal
31	$\overline{XTAL}$	O	Oscillation continuation terminal
32	D.VDD		VDD for logic circuit
33	SCKO	O	Clock output terminal for audio serial data
34	LRCK	O	Signal distinguishing between left and right channel DOUT terminal output
35	DOUT	O	Serial audio data output terminal
36	TX	O	Digital audio interface data output terminal
37	FLAG	O	Flag signal indicating that the current audio data output of incorrectable data
38	EMPH	O	Emphasis information output
39	WDCK	O	Output terminal for signal having double the frequency of LRCK
40	C2D3	O	Output terminal indicating C2 error correction status
41	SFSY	O	Signal indicating subcode one-frame synchronization
42	SBSY	O	Signal indicating head of subcode block
43	SBSO	O	Subcode data output terminal
44	SBCK	I	Subcode data read clock input terminal
45	D.GND		Logic circuit GND
46,47	C1D1,C1D2	O	Output terminal indicating C1 error correction status
48,49	C2D1,C2D2	O	Output terminal indicating C2 error correction status
50	T4	I	Selects between focus and tracking modulation mode
51	T5	I	Selects motor PWM input mode
52	T6	I	Sets focus PWM input mode
53	T7	I	Sets tracking PWM input mode
54	D.VDD		VDD for logic circuit
55	MRD	O	PWM negative output terminal for the spindle loop filter
56	MFD	O	PWM positive output terminal for the spindle loop filter
57	SRD	O	PWM negative output terminal for the thread loop filter
58	SFD	O	PWM positive output terminal for the thread loop filter

Pin No.	Pin Name	I/O	Function and Operation
59	D.GND		Logic circuit GND
60	TRD	O	PWM negative output terminal for the tracking loop filter
61	TFD	O	PWM positive output terminal for the tracking loop filter
62	FRD	O	PWM negative output terminal for the focus loop filter
63	FFD	O	PWM positive output terminal for the focus loop filter
64	D.VDD		VDD for logic circuit
65	OUTSEL	I	Sets PWM output mode for the motor system
66	TEC1	I	Tracking error input terminal
67	TEC0	I	Tracking error input terminal
68	A.VDD		VDD for analog circuit
69,70	VR2,VR1	I	A/D converter input
71	TE	I	Tracking error input terminal
72	FE	I	Focus error input terminal
73	RFB	I	RFB signal input terminal
74	RFP	I	RFP signal input terminal
75	A.GND		Analog circuit GND
76	REFOUT	O	A/D converter midpoint voltage output terminal inside LSI
77	RFI	I	RF signal input terminal for EFM comparator
78	ASI	I	Level comparing input for RF signal comparison
79	EFM	O	EFM signal output terminal
80	A.VDD		VDD for analog circuit

*UPD63700GF1



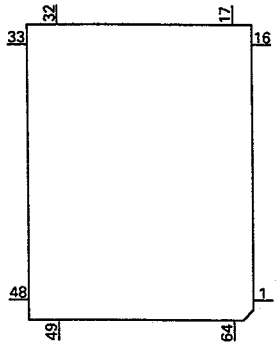
TA2063F



● **Pin Functions(PD4571A)**

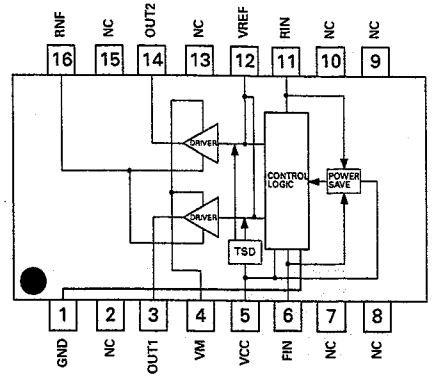
Pin No.	Pin Name	I/O	I/O Format	Function and Operation
1	NC			Not used
2	XRST	O	C	CD LSI reset output
3–5	CBNK2-0	O	C	DSP bank for compressor set up output
6	DRST	O	C	DSP bank for compressor reset output
7	HOME	I		Home position detector input
8	CLAMP	I		Disc clamp sense input
9	VSS			GND
10	LATCH	O	C	Latch output
11	EJECT	O	C	Eject key output pin
12	LOAD	O	C	Loading motor LOAD control
13	CONT	O	C	Servo driver power supply control
14	NC			Not used
15	CDMUTE	O	C	CD mute output
16	NC			Not used
17	ADENA	O	C	A/D reference voltage output
18–23	NC			Not used
24	VSS			GND
25	NC			Not used
26	BMUTE	O	C	Bus mute output
27–30	NC			Not used
31	BRXEN	I/O	C	Reception enable input/output
32	BSRQ	O	C	P-BUS serial pole request output
33	VDCONT	O	C	VD control output
34	CD5VON	O	C	CD +5V power supply control output
35	RESET	I		Reset input
36	TXARI	I		Set up of TX output select input
37	CSENS	I		Flap close sense input
38	BRST	I		Reset input
39	COMP	I		Compression select input
40	VDD			Power supply
41	X2			Crystal oscillator connection pin
42	X1	I		Crystal oscillator connection pin
43	VSS			GND
44	NC			Not used
45	TESTIN	I		Test program start input
46	VSS			A/D GND
47	TEMP			Temperature detector
48	VDSENS			Over voltage sense
49	EJTD			Disc eject position sense
50	DINC			Disc insert sense
51	NC			Not used
52	FOK	I		FOK signal input
53	MIRR	I		Mirror detector input
54	LOCK	I		Spindle lock detector input
55	AVDD			A/D analog power supply
56	AVREF	I		A/D converter reference voltage
57	XSI	I		LSI data input
58	XSO	O	C	LSI data output
59	XSCK	O	C	LSI clock output
60	XSTB	O	C	CD LSI strobe output
61	XA0	O	C	Control signal distinguishing data from microcomputer
62	VSS			GND
63	BDATA	I/O	C	P-BUS serial data input/output
64	BSCK	I/O	C	P-BUS serial clock input/output

*PD4571A

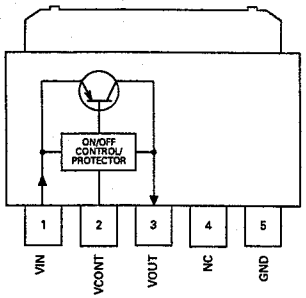


I/O Format	Meaning
C	C MOS

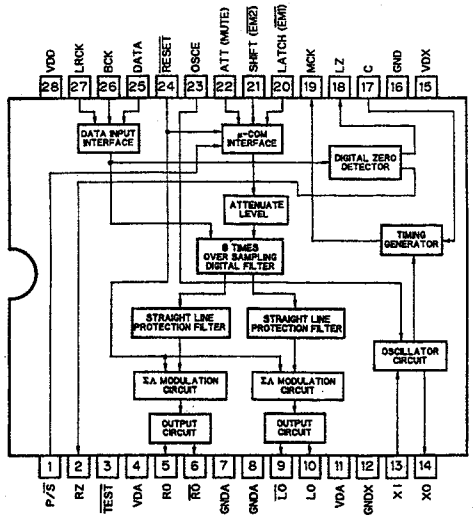
XRA6285FP



PQ05TZ51



PD2026BM



PD4501A

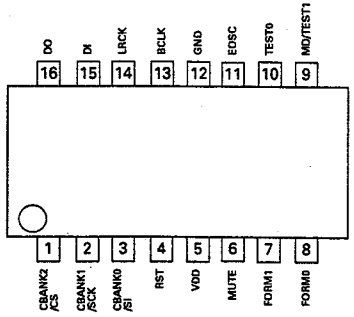
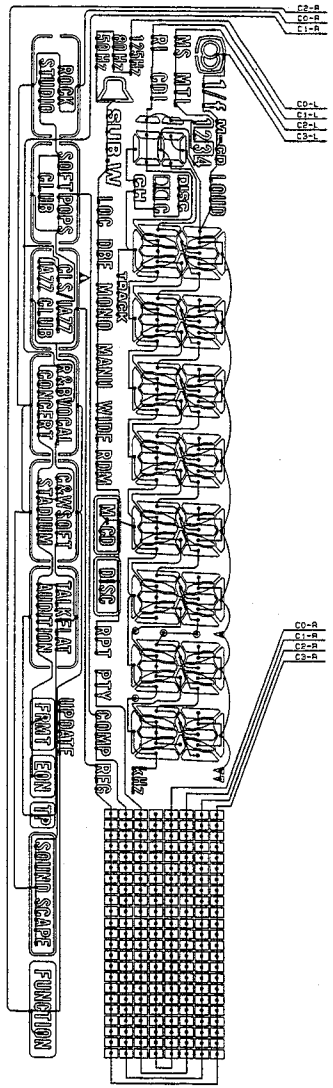
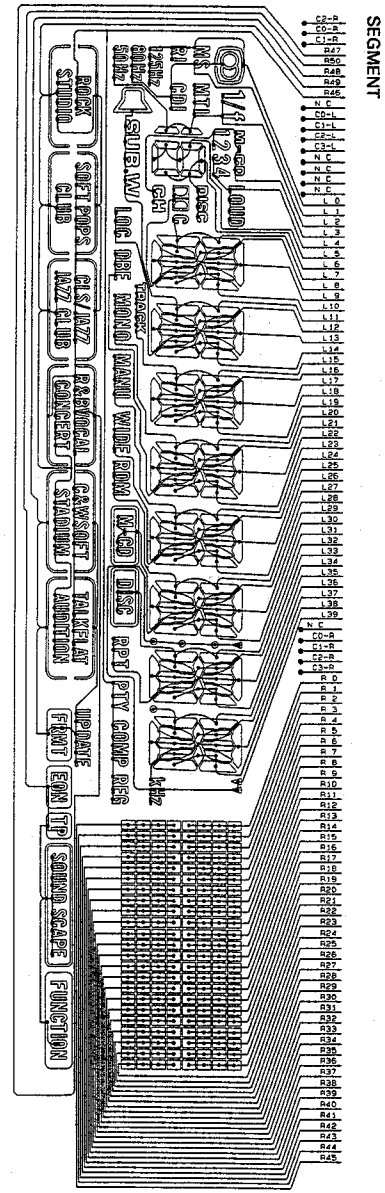


Fig.15





● LCD (CAW1261) (DEH-P815/UC, P815RDS/EW)

5. ELECTRICAL PARTS LIST

NOTE:

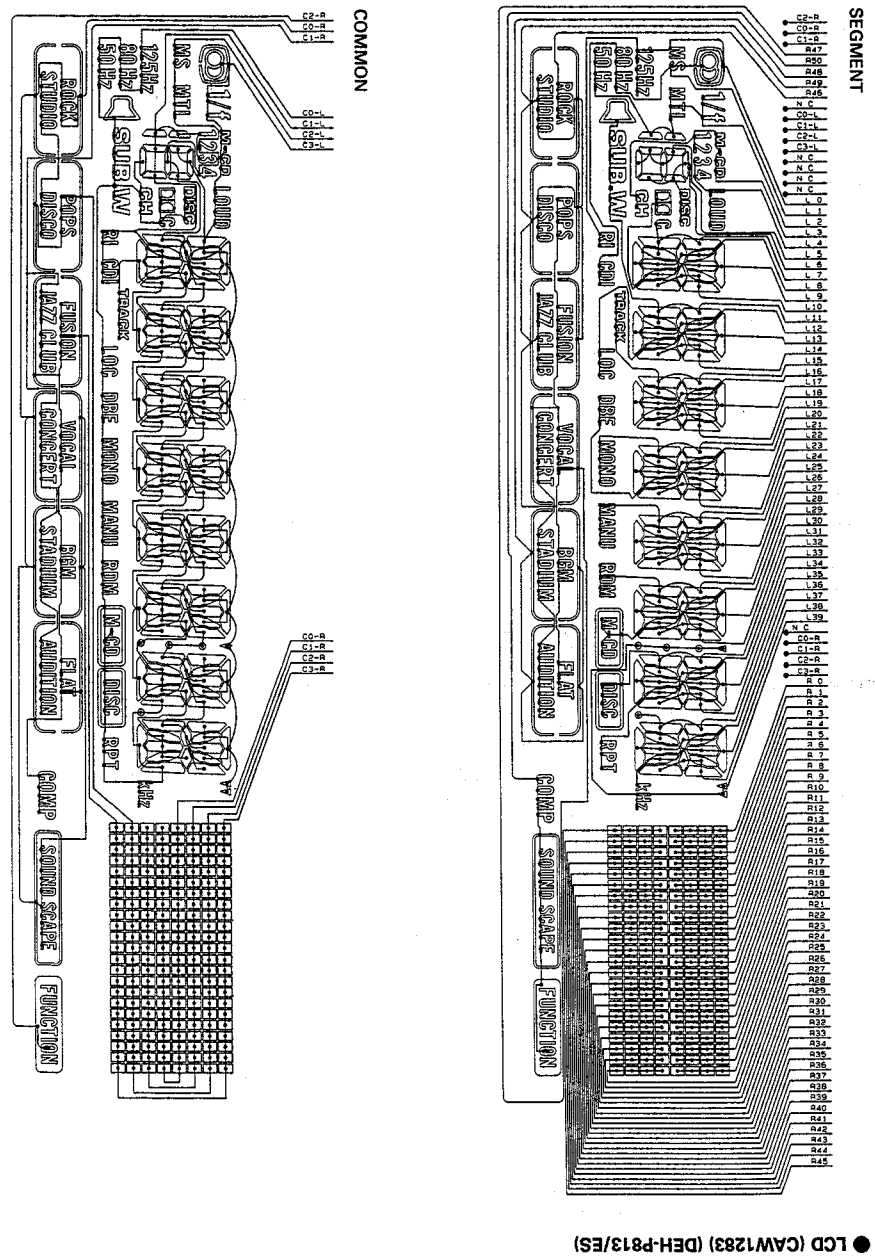
- Parts whose parts numbers are omitted are subject to being not supplied.
- The part numbers shown below indicate chip components.

Chip Resistor
RS1/OSOOOJ,RS1/OOSOOOJ
Chip Capacitor (except for CQS.....)
CKS....., CCS....., CSZS.....

=====Circuit Symbol & No. Part Name=====		Part No.
Unit Number : CWX1720		
Unit Name : Control Unit		
MISCELLANEOUS		
IC 1001		UPC2571GS
IC 1201		UPD63700GF1
IC 1301		PA3026
IC 1302		XRA6285FP
IC 1303		NJM4558M
IC 1601		PD2026BM
IC 1602		TA2063F
IC 1603		PD4501A
IC 1701		PD4571A
IC 1902		PQ05TZ51
Q 1001		2SB1132
Q 1601 1602		2SD1781K
Q 1603		2SB709A
Q 1701		UN2111
D 1601		MA151WA-MN
D 1801 1802	Chip LED	CL200IRX
D 1901 1902 1903 1904		SC016-2
L 1601	Inductor	LCTBR39K2125
TH1701	Thermistor	CCX1015
X 1601	Crystal Resonator	CSS1067
X 1701	Radiator	CSS1354
S 1801 1802	Switch	CSN1028
VR1001	Semi-fixed2.2kΩ(B)	CCP1177
VR1002	Semi-fixed22kΩ(B)	CCP1183
VR1003	Semi-fixed47kΩ(B)	CCP1185
VR1004	Semi-fixed47kΩ(B)	CCP1185
	Checker Chip	CKF1031
RESISTORS		
R 1001		RS1/8S100J
R 1002		RS1/8S120J
R 1003 1201 1307 1702		RS1/16S103J
R 1004 1024 1025 1315 1318 1604 1719		RS1/16S102J
R 1005		RS1/16S823J
R 1006		RS1/16S182J
R 1007		RS1/16S333J
R 1011 1012		RS1/16S683J
R 1013 1311 1605		RS1/16S102J
R 1014 1310 1725		RS1/16S473J
R 1018 1020		RS1/16S622J
R 1019		RS1/16S563J
R 1021		RS1/16S513J
R 1022		RS1/16S133J
R 1026		RS1/16S102J
R 1027		RS1/16S183J
R 1028		RS1/16S822J
R 1029		RS1/16S0R0J
R 1301 1302		RS1/16S222J
R 1303		RS1/16S223J

=====Circuit Symbol & No. Part Name=====	Part No.
R 1304	RS1/16S123J
R 1305 1306	RS1/16S332J
R 1308	RS1/16S163J
R 1309 1610	RS1/16S103J
R 1317 1727	RS1/16S473J
R 1601	RS1/16S301J
R 1603	RS1/16S0R0J
R 1606 1607	RS1/16S223J
R 1608	RS1/16S162J
R 1609	RS1/16S162J
R 1703 1704 1715 1718	RS1/16S222J
R 1706	RS1/16S303J
R 1707 1708	RS1/16S333J
R 1709	RS1/16S122J
R 1710	RS1/16S472J
R 1716 1717	RS1/16S104J
R 1720 1723	RS1/16S681J
R 1721 1722 1724	RS1/16S681J
R 1801 1802	RS1/8S821J
CAPACITORS	
C 1001 1008 1010 1011 1303	CKSRYB102K50
C 1002 1904	CEV101M6R3
C 1003 1609 1617 1618 1703	CKSQYB104K16
C 1004	CEV470M6R3
C 1005	CCSRCH101J50
C 1006 1023	CKSRYB561K50
C 1007 1902	CKSYB334K16
C 1009	CCSRCH181J50
C 1013	CKSRYB103K50
C 1014	CCSRCH220J50
C 1015 1016 1017 1018	CKSYF105Z16
C 1021	CKSYB104K50
C 1022	CKSRYB332K50
C 1201 1202	CKSYF105Z16
C 1203	CKSRYB102K50
C 1301 1302	CKSRYF683Z25
C 1304	CKSRYB152K50
C 1305	CKSRYB271K50
C 1307 1308 1619 1620	CKSRYB103K50
C 1309 1311	CEV101M10
C 1310 1608 1616 1621	CKSRYB103K50
C 1601	CCSRCH151J50
C 1602	CCSRCH100D50
C 1603 1604 1903	CKSYB224K16
C 1606 1607	CCSRCH120J50
C 1612	CEV220M6R3
C 1613 1614	CEV4R7M35
C 1704	CKSRYB472K50
C 1901	CEV220M16

Fig.16



● LCD (CAW1283) (DEH-P813/ES)

=====Circuit Symbol & No. Part Name=====	Part No.
Unit Number : CWX1791(DEH-P815/UC)	
Unit Name : Tuner Amp Unit	
MISCELLANEOUS	
IC 401	TA2050S
IC 402	PA0051AM
IC 451	SN761025DL
IC 452 802 804 854 855 856 857	NJM4558MD
IC 501	LC72140M
IC 551	PAL003A
IC 601	PD4557A
IC 701	PD6154B
IC 705	PD4565A
IC 801	M5282FP
IC 803	BU4052BCFV
IC 851 852 853	BU4066BCFV
IC 921	PML001A
IC 961	S-80732ANDWI
IC 971	PA2024A
Q 401 602 861 981	DTA124EK
Q 402 662 669 941	2SA1162
Q 403 859	DTC124EK
Q 404 551 552 601 860 862 982	DTC124EK
Q 405 406	DTC343TK
Q 407	DTA114TK
Q 423 424 503 641 667 851 852 853 854 951	2SC2712
Q 501	2SC3098
Q 502 661 670	2SC3295
Q 504 506 642 663 665	2SC2712
Q 505 507	2SK208
Q 664 911	2SD1760F5
Q 666	2SB1238
Q 668	2SD1864
Q 801 802 855 856 857 858	DTC314TK
Q 952 991	2SC2712
Q 983	2SD2396
D 401 851 852	MA151WA-MN
D 423 424	MA151K-MH
D 426 801	MA151WA-MN
D 501 502	MA3027H
D 504 661 941 971	MA151WK-MT
D 641	MA716
D 642	MA716
D 643 644 961 991	MA151K-MH
D 662 666 667 668	MA153-MC
D 663	MA3082L
D 664	MA3047M
D 665	MA3062MH
D 901 902 911 921 922	ERA15-02VH
D 912	HZS6LB1
D 951	MA3082L
D 952	MA3075H
D 981	RB100AVH
D 983	HZS9LC3
L 481 501 601 602 Ferri-Inductor	LAU2R2K
L 502 Ferri-Inductor	CTF-157
L 503 Coil	LCTBR10K2125
L 661 Transformer	CTT1038
L 662 703 941 Ferri-Inductor	LAU2R2K
L 701 Ferri-Inductor	LAU101K
L 851 852 853 854 Inductor	LCTB2R2K2125
TC 601 Trimmer	CCG-070
X 501 Crystal	CSS1030
X 601 Radiator	CSS1303

=====Circuit Symbol & No. Part Name=====	Part No.
X 701 Radiator	CSS1338
S 851 Switch	CSH1009
S 961 Switch	CSG1046
IL 661 Lamp 14V 40mA	CEL1263
EF 901 EMI Filter	CCG1006
BZ 601	CPV1011
Tuner Unit	CWE1358
RESISTORS	
R 399 400 405 406 414 433 434 517 519 520	RS1/16S102J
R 401 402 469 470 501	RS1/16S101J
R 403	RS1/16S620J
R 404 418 441 442 507 513 526 527 644 678	RS1/16S222J
R 407 408 429 430 533 534 540 541 603 614	RS1/16S473J
R 409 413 435 436 508 642 677 819 820 887	RS1/16S223J
R 410 473 474 475 516 542 666 804 891 892	RS1/16S472J
R 411 532 544 671 851 852 853 854 942	RS1/16S472J
R 412	RS1/16S181J
R 415	RS1/16S102J
R 416 641	RS1/16S223J
R 417	RS1/16S181J
R 419 420	RS1/16S333J
R 431 432 627	RS1/16S683J
R 437	RS1/16S183J
R 438 650	RS1/16S273J
R 439 440	RS1/16S753J
R 453 454	RS1/16S912J
R 455 672 801 802 803 855 856 857 858 899	RS1/16S103J
R 456 471 472 510 515 559 560 562 617 661	RS1/16S103J
R 457 458	RS1/16S153J
R 465	RS1/16S272J
R 466	RS1/16S272J
R 467 468	RS1/16S151J
R 502	RS1/16S332J
R 503 561	RS1/16S331J
R 504	RS1/16S330J
R 505 817 818 879 880 881 882	RS1/16S821J
R 506	RS1/16S680J
R 509 604 606 608 610 612	RS1/16S221J
R 512 529 536 537 538 539 643	RS1/16S222J
R 514	RS1/16S0R0J
R 518	RS1/16S152J
R 521 522 523 524 528 543 615 616 752 753	RS1/16S102J
R 531 625 635	RS1/16S473J
R 535	RS1/16S0R0J
R 547 705	RS1/16S0R0J
R 601 602 613 628 806 807 808 809 810 811	RS1/16S104J
R 605 607 609 611	RS1/16S682J
R 618 620 621 622 623 624 629 630 631 632	RS1/16S473J
R 619	RS1/16S223J
R 626	RS1/16S471J
R 633 663 665 707 712 713 714 715 716 748	RS1/16S473J
R 645 646	RS1/16S154J
R 647 648 863 864 865 866	RS1/16S224J
R 649	RS1/16S273J
R 662 685	RS1/16S224J
R 664 805	RS1/16S103J
R 667	RS2P100JL
R 668	RD1/4PS681JL
R 669 682	RS1/10S222J
R 670	RS1/2S681J
R 673	RS1/16S204J
R 674	RS1/16S104J
R 675	RS1/10S241J

=====Circuit Symbol & No. Part Name=====	Part No.
R 676	RS1/10S512J
R 679	RS1/8S222J
R 680 681	RS1/8S472J
R 683 684	RS1/10S472J
R 703 704 708 709 710 711	RS1/16S681J
R 749 750 751 894	RS1/16S473J
R 754 755 756 757 758 759 760 761 762 763	RS1/16S102J
R 764 765 766 767 768 769 770 771 772 773	RS1/16S102J
R 774 775 776 777 778 779 944 962 972	RS1/16S102J
R 780	RS1/16S473J
R 812	RS1/16S105J
R 813 814	RS1/16S103J
R 815 816	RS1/16S273J
R 821 822 823 824	RS1/16S473J
R 825	RS1/16S104J
R 859 860 861 862	RS1/16S513J
R 867 868	RS1/16S223J
R 869 870	RS1/16S223J
R 871 873	RS1/16S104J
R 872 874 971	RS1/16S104J
R 875 876 878	RS1/16S913J
R 877	RS1/16S913J
R 888 889 890	RS1/16S223J
R 893	RS1/10S220J
R 895 898	RS1/16S184J
R 896 897	RS1/16S184J
R 911	RS1/10S101J
R 912	RS1/10S103J
R 921	RS1/10S103J
R 941	RS1/10S183J
R 943 973 974	RS1/16S472J
R 952 955 992	RS1/10S473J
R 953 956 991	RS1/10S223J
R 961	RS1/16S124J
R 981	RD1/4PS221JL
R 983	RS1/10S221J
CAPACITORS	
C 401 456 483 489 490 491 492 493 573 645	CKSQYB104K16
C 402 403	CKSQYB102K50
C 404 407 411 412 457 458 463 464 477 478	CEA100M16LL
C 405 406 408 409 431 432 433 434 453 454	CEA010M50LL
C 429 430 480 981	CEA2R2M50LL
C 435	CKSQYB183K25
C 451 452 484 485 519 601	CEA4R7M35LL
C 455 913 972 974	CEA470M10LL
C 459 460	CKSQYB822K50
C 461 462 572 872 873 874 875 876 877 878	CEA010M50LL
C 465 466	CKSQYB152K50
C 467 468 805	CKSQYB183K25
C 469 470	CKSQYB102K50
C 471 472	CEA2R2M35NPLL
C 473 474 503 504 509 510 602 647 648 665	CCSQCH101J50
C 475 476	CKSQYB333K50
C 479 481 482 664 725 813 814 859 860 861	CEA100M16LL
C 487 488 801	CCSQCH220J50
C 501 505 511 514 517 524 661 701 708 715	CKSQYB103K25
C 502	CCSQCH681J50
C 507 808	CKSQYB223K50
C 508	CKSQYB223K50
C 512 0.047µF	CCG1008
C 513 4.7µF/16V	CCH1165
C 516	CFTNA474J50
C 520	CCSQCH560J50
C 521	CKSQYB103K25
C 522	CKSQYB103K25
C 523	CKSYB224K16
C 525 526	CCSQCH270J50

=====Circuit Symbol & No. Part Name=====	Part No.
C 551 552 553 554	CKSQYB224K16
C 567	CEAS220M16
C 568	CEAS010M50
C 569	CEA330M16LL
C 570 911 1000µF/16V	CCH1149
C 571 3300µF/16V	CCH1150
C 603 604	CCSQCH330J50
C 605	CCSQCH101J50
C 606	CCSQCH120J50
C 607 608	CKSQYB102K50
C 609 610	CKSQYB102K50
C 611	CKSQYB103K25
C 641 642 646	CKSQYB104K16
C 643 644	CKSYB224K16
C 662 667	CEAS221M10
C 663 807 982	CKSQYB473K16
C 666	CCSQCH101J50
C 702	CKSQYB104K16
C 727	CKSQYB102K50
C 802 803	CEA100M10NPLL
C 804 811 812	CCSQCH220J50
C 806	CKSQYB273K50
C 809	CKSQYB153K50
C 810 818 869 870	CKSQYB103K25
C 815 816 863 864 865 866	CCSQCH221J50
C 817	CEA220M10LL
C 819	CKSQYB224K16
C 851 852 854	CCSQCH220J50
C 853	CCSQCH220J50
C 855 856 857 858	CEA010M50LL
C 862	CEA100M16LL
C 867 868 912 991	CKSQYB103K25
C 871 973	CEA101M10LL
C 879	CEA010M50LL
C 901	CKSQYB104K16
C 921	CKSQYB473K16
C 971 470µF/16V	CCH1183
C 975 330µF/10V	CCH1181
C 981	CEAS331M16
C 983	CKSQYB104K16
Unit Number : CWX1790(DEH-P815RDS/EW)	
Unit Name : Tuner Amp Unit	
MISCELLANEOUS	
IC 401	TA2050S
IC 402	PA0051AM
IC 451	SN761025DL
IC 452 802 804 854 855 856 857	NJM4558MD
IC 501	LC72140M
IC 551	PAL003A
IC 601	PD4561A
IC 701	PD6147A
IC 702	PMR001B
IC 703	SC145U69F
IC 704	NJM2903M
IC 801	M5282FP
IC 803	BU4052BCFV
IC 851 852 853	BU4066BCFV
IC 921	PML001A
IC 961	S-80732ANDWI
IC 971	PA2024A
Q 401 602 861 981	DTA124EK
Q 402 662 669 707 941	2SA1162
Q 403 508 702 859	DTC124EK
Q 404 425 551 552 601 708 860 862 982	DTC124EK
Q 405 406	DTC343TK
Q 407	DTA114TK
Q 421 422	DTC343TK
Q 423 424 503 641 667 703 706 851 852 853	2SC2712

=====Circuit Symbol & No. Part Name=====	Part No.
Q 501	2SC3098
Q 502 661 670	2SC3295
Q 504 506 642 663 665 704 705	2SC2712
Q 505 507	2SK208
Q 664 911	2SD1760F5
Q 668	2SB1238
Q 668	2SD1864
Q 701	2SA1162
Q 801 802 855 856 857 858	DTC314TK
Q 854 951 952 991	2SC2712
Q 983	2SD2396
D 401 851 852	MA151WA-MN
D 423 424	MA151K-MH
D 426 801	MA151WA-MN
D 501 502	MA3027H
D 504 661 941 971	MA151WK-MT
D 641	MA716
D 642	MA716
D 643 644 961 991	MA151K-MH
D 662 666 667 668	MA153-MC
D 663	MA3082L
D 664 701	MA3047M
D 665	MA3062MH
D 901 902 911 921 922	ERA15-02VH
D 912	HZS6LB1
D 951	MA3082L
D 952	MA3075H
D 981	RB100AVH
D 983	HZS9LC3
L 481 501 601 602 Ferri-Inductor	LAU2R2K
L 502 Ferri-Inductor	CTF-157
L 503 Coil	LCTBR10K2125
L 661 Transformer	CTT1038
L 662 941 Ferri-Inductor	LAU2R2K
L 701 702 Ferri-Inductor	LAU101K
L 851 852 853 854 Inductor	LCTB2R2K2125
TC 601 Trimmer	CCG-070
X 501 Crystal	CSS1030
X 601 Crystal Radiator	CSS1303
X 701 Crystal	CSS1056
S 851 Switch	CSH1009
S 961 Switch	CSG1046
IL 661 Lamp 14V 40mA	CEL1263
VR 701 Semi-fixed	CCP1123
EF 901 EMI Filter	CCG1006
BZ 601	CPV1011
Tuner Unit	CWE1358

RESISTORS

=====Circuit Symbol & No. Part Name=====	Part No.
R 399 400 405 406 414 433 434 517 519 520	RS1/16S102J
R 401 402 469 470 501	RS1/16S101J
R 403	RS1/16S820J
R 404 418 441 442 443 507 513 526 527 644	RS1/16S222J
R 407 408 533 534 540 541 601 602 603 614	RS1/16S473J
R 409 413 435 436 508 642 677 730 819 820	RS1/16S223J
R 410 473 474 475 516 542 666 804 891 892	RS1/16S472J
R 411 532 544 671 851 852 853 854 942	RS1/16S472J
R 412	RS1/16S181J
R 415 701 720 738 740 741 742 743 744	RS1/16S102J
R 416 641 717 731 734	RS1/16S223J
R 417	RS1/16S181J
R 419 420	RS1/16S333J
R 429 430	RS1/16S912J
R 431 432 627	RS1/16S683J
R 437	RS1/16S183J
R 438 650	RS1/16S273J
R 439 440	RS1/16S753J
R 453 454	RS1/16S912J
R 455 672 728 729 801 802 803 855 856 857	RS1/16S103J

=====Circuit Symbol & No. Part Name=====	Part No.
R 456 471 472 510 515 559 560 562 617 661	RS1/16S103J
R 457 458	RS1/16S153J
R 465	RS1/16S272J
R 466	RS1/16S272J
R 467 468	RS1/16S151J
R 502 727	RS1/16S332J
R 503 561	RS1/16S331J
R 504	RS1/16S330J
R 505 817 818 879 880 881 882	RS1/16S821J
R 506	RS1/16S680J
R 509 604 606 608 610 612	RS1/16S221J
R 512 529 536 537 538 539 643 723 739	RS1/16S222J
R 514	RS1/16S0R0J
R 518	RS1/16S152J
R 521 522 523 524 528 543 615 616 725 746	RS1/16S102J
R 531 625 635 702 735 737	RS1/16S473J
R 535	RS1/16S0R0J
R 547	RS1/16S0R0J
R 605 607 609 611	RS1/16S682J
R 613 722 736 806 807 808 809 810 811 872	RS1/16S104J
R 618 620 621 622 623 624 628 629 630 631	RS1/16S473J
R 619	RS1/16S223J
R 626	RS1/16S471J
R 632 633 663 665 707 724 894	RS1/16S473J
R 645 646	RS1/16S154J
R 647 648 863 864 865 866	RS1/16S224J
R 649	RS1/16S273J
R 662 685 721	RS1/16S224J
R 664 805	RS1/16S103J
R 667	RS2P100JL
R 668	RD1/4PS681JL
R 669 682	RS1/16S222J
R 670	RS1/2S681J
R 673	RS1/16S204J
R 674	RS1/16S104J
R 675	RS1/16S241J
R 676	RS1/16S512J
R 678 705	RS1/16S222J
R 679	RS1/8S222J
R 680 681	RS1/8S472J
R 683 684	RS1/16S472J
R 703 704 708 709 710 711 726	RS1/16S681J
R 718	RS1/16S392J
R 719	RD1/4PS620JL
R 732 733	RS1/16S331J
R 745	RS1/16S102J
R 747	RS1/16S683J
R 781	RS1/16S683J
R 812	RS1/16S105J
R 813 814	RS1/16S103J
R 815 816	RS1/16S273J
R 821 822 823 824	RS1/16S473J
R 825	RS1/16S104J
R 858 899	RS1/16S103J
R 859 860 861 862	RS1/16S513J
R 867 868	RS1/16S223J
R 869 870	RS1/16S223J
R 871 873	RS1/16S104J
R 874 971	RS1/16S104J
R 875 876 878	RS1/16S913J
R 877	RS1/16S913J
R 887 888 889 890	RS1/16S223J
R 893	RS1/10S220J
R 895 898	RS1/16S184J
R 896 897	RS1/16S184J

=====Circuit Symbol & No. Part Name=====	Part No.
R 911	RS1/10S101J
R 912	RS1/10S103J
R 921	RS1/10S103J
R 941	RS1/10S183J
R 943 973 974	RS1/16S472J
R 944 962 972	RS1/16S102J
R 952 955 992	RS1/10S473J
R 953 956 991	RS1/10S223J
R 961	RS1/16S124J
R 981	RD1/4PS221JL
R 983	RS1/10S221J

CAPACITORS

=====Circuit Symbol & No. Part Name=====	Part No.
C 401 456 483 489 490 491 492 493 573 645	CKSQYB104K16
C 402 403	CKSQYB102K50
C 404 407 411 412 457 458 463 464 477 478	CEA100M16LL
C 405 406 408 409 431 432 433 434 453 454	CEA010M50LL
C 429 430 480 714 961	CEA2R2M50LL
C 435	CKSQYB183K25
C 451 452 484 485 519 601	CEA4R7M35LL
C 455 913 972 974	CEA470M10LL
C 459 460	CKSQYB822K50
C 461 462 572 872 873 874 875 876 877 878	CEA010M50LL
C 465 466	CKSQYB152K50
C 467 468 805	CKSQYB183K25
C 469 470 716	CKSQYB102K50
C 471 472	CEA2R2M35NPLL
C 473 474 503 504 509 510 602 647 648 865	CCSQCH101J50
C 475 476	CKSQYB333K50
C 479 481 482 664 709 712 723 813 814 859	CEA100M16LL
C 487 488 801	CCSQCH220J50
C 501 505 511 514 517 524 661 701 705 708	CKSQYB103K25
C 502	CCSQCH681J50
C 507 724 808	CKSQYB223K50
C 508 706 713	CKSQYB223K50
C 512 0.047µF	CCG1008
C 513 4.7µF/16V	CCH1165
C 516	CFTNA474J50
C 518	CEAR47M50LL
C 520	CCSQCH560J50
C 521	CKSQYB103K25
C 522	CKSQYB103K25
C 523	CKSYB224K16
C 525 526 703 704	CCSQCH270J50
C 551 552 553 554	CKSQYB224K16
C 567	CEAS220M16
C 568	CEAS010M50
C 569	CEA330M16LL
C 570 911 1000µF/16V	CCH1149
C 571 3300µF/16V	CCH1150
C 603 604	CCSQCH330J50
C 605	CCSQCH101J50
C 606	CCSQCH120J50
C 607 608	CKSQYB102K50
C 609 610	CKSQYB102K50
C 611	CKSQYB103K25
C 641 642 646	CKSQYB104K16
C 643 644	CKSYB224K16
C 662 667	CEAS221M10
C 663 807 982	CKSQYB473K16
C 666	CCSQCH101J50
C 702	CKSQYB104K16
C 707	CKSQYB472K50
C 710	CKSQYB682K50
C 711	CKSQYB393K50
C 715 867 868 912 991	CKSQYB103K25
C 717	CKSQYB103K25
C 718	CKSQYB223K50

=====Circuit Symbol & No. Part Name=====	Part No.
C 719	CSZSR3R3M16
C 720 721	CSZS010M16
C 722	CKSQYB472K50
C 726	CKSQYB103K25
C 727	CKSQYB102K50
C 802 803	CEA100M10NPLL
C 804 811 812	CCSQCH220J50
C 806	CKSQYB273K50
C 809	CKSQYB153K50
C 810 818 869 870	CKSQYB103K25
C 815 816 863 864 865 866	CCSQCH221J50
C 817	CEA220M10LL
C 819	CKSQYB224K16
C 851 852 854	CCSQCH220J50
C 853	CCSQCH220J50
C 855 856 857 858	CEA010M50LL
C 860 861 862	CEA100M16LL
C 871 973	CEA101M10LL
C 879	CEA010M50LL
C 901	CKSQYB104K16
C 921	CKSQYB473K16
C 971 470µF/16V	CCH1183
C 975 330µF/10V	CCH1181
C 981	CEAS331M16
C 983	CKSQYB104K16

Unit Number : CWX1792(DEH-P813/ES)
Unit Name : Tuner Amp Unit

MISCELLANEOUS

=====Circuit Symbol & No. Part Name=====	Part No.
IC 401	TA2050S
IC 402	PA0051AM
IC 451	SN761025DL
IC 452 802 804 854 855 856 857	NJM4558MD
IC 501	LC72140M
IC 551	PAL003A
IC 601	PD4561A
IC 801	M5282FP
IC 803	BU4052BCFV
IC 851 852 853	BU4066BCFV
IC 921	PML001A
IC 961	S-80732ANDWI
IC 971	PA2024A
Q 401 802 861 981	DTA124EK
Q 402 662 669 941	2SA1162
Q 403 859	DTC124EK
Q 404 551 552 601 860 862 982	DTC124EK
Q 405 406	DTC343TK
Q 407	DTA114TK
Q 423 424 503 641 667 851 852 853 854 951	2SC2712
Q 501 510	2SC3098
Q 502 661 670	2SC3295
Q 504 506 642 663 665	2SC2712
Q 505 507	2SK208
Q 664 911	2SD1760F5
Q 666	2SB1238
Q 668	2SD1864
Q 801 802 855 856 857 858	DTC314TK
Q 952 991	2SC2712
Q 983	2SD2396
D 401 851 852	MA151WA-MN
D 423 424	MA151K-MH
D 426 801	MA151WA-MN
D 501 502	MA3027H
D 504 661 941 971	MA151WK-MT
D 641	MA716
D 642	MA716
D 643 644 961 991	MA151K-MH
D 662 666 667 668	MA153-MC
D 663	MA3082L

=====Circuit Symbol & No.	Part Name=====	Part No.
D 664		MA3047M
D 665		MA3062MH
D 901 902 911 921 922		ERA15-02VH
D 912		HZS6LB1
D 951		MA3082L
D 952		MA3075H
D 981		RB100AVH
D 983		HZS9LC3
L 481 501 601 602	Ferri-Inductor	LAU2R2K
L 502	Ferri-Inductor	CTF-157
L 503	Coil	LCTBR10K2125
L 661	Transformer	CTT1038
L 662 941	Ferri-Inductor	LAU2R2K
L 851 852 853 854	Inductor	LCTB2R2K2125
TC 601	Trimmer	CCG-070
X 501	Crystal	CSS1030
X 601	Radiator	CSS1303
S 851	Switch	CSH1009
S 961	Switch	CSG1046
IL 661	Lamp 14V 40mA	CEL1263
EF 901	EMI Filter	CCG1006
BZ 601		CPV1011
	Tuner Unit	CWE1358

RESISTORS

R 399 400 405 406 414 433 434 517 519 520	RS1/16S102J
R 401 402 469 470 501	RS1/16S101J
R 403	RS1/16S620J
R 404 418 441 442 507 513 526 527 844 678	RS1/16S222J
R 407 408 429 430 533 534 540 541 603 614	RS1/16S473J
R 409 413 435 436 508 642 677 819 820 887	RS1/16S223J
R 410 473 474 475 516 542 666 804 891 892	RS1/16S472J
R 411 532 544 671 851 852 853 854 942	RS1/16S472J
R 412	RS1/16S181J
R 415	RS1/16S102J
R 416 641	RS1/16S223J
R 417	RS1/16S181J
R 419 420	RS1/16S333J
R 431 432 627	RS1/16S683J
R 437	RS1/16S183J
R 438 650	RS1/16S273J
R 439 440	RS1/16S753J
R 453 454	RS1/16S912J
R 455 672 801 802 803 855 856 857 858 899	RS1/16S103J
R 456 471 472 510 515 559 560 562 617 661	RS1/16S103J
R 457 458	RS1/16S153J
R 465	RS1/16S272J
R 466	RS1/16S272J
R 467 468	RS1/16S151J
R 502	RS1/16S332J
R 503 561	RS1/16S331J
R 504	RS1/16S330J
R 505 817 818 879 880 881 882	RS1/16S821J
R 506	RS1/16S680J
R 509 604 606 608 610 612	RS1/16S221J
R 512 529 536 537 538 539 546 643	RS1/16S222J
R 514	RS1/16S0R0J
R 518	RS1/16S152J
R 521 522 523 524 528 543 615 616	RS1/16S102J
R 531 625 634	RS1/16S473J
R 535	RS1/16S0R0J
R 545	RS1/16S0R0J
R 605 607 609 611	RS1/16S682J
R 613 806 807 808 809 810 811	RS1/16S104J
R 618 620 621 622 623 624 632	RS1/16S473J

=====Circuit Symbol & No.	Part Name=====	Part No.
R 619		RS1/16S223J
R 628		RS1/16S471J
R 633 663 665		RS1/16S473J
R 645 646		RS1/16S154J
R 647 648 863 864 865 866		RS1/16S224J
R 649		RS1/16S273J
R 662 685		RS1/16S224J
R 664 805		RS1/16S103J
R 667		RS2P100JL
R 668		RD1/4PS681JL
R 669 682		RS1/10S222J
R 670		RS1/2S681J
R 673		RS1/16S204J
R 674		RS1/16S104J
R 675		RS1/10S241J
R 676		RS1/10S512J
R 679		RS1/8S222J
R 680 681		RS1/8S472J
R 683 684		RS1/10S472J
R 812		RS1/16S105J
R 813 814		RS1/16S103J
R 815 816		RS1/16S273J
R 821 822 823 824		RS1/16S473J
R 825		RS1/16S104J
R 859 860 861 862		RS1/16S513J
R 867 868		RS1/16S223J
R 869 870		RS1/16S223J
R 871 873		RS1/16S104J
R 872 874 971		RS1/16S104J
R 875 876 878		RS1/16S913J
R 877		RS1/16S913J
R 888 889 890		RS1/16S223J
R 893		RS1/10S220J
R 894		RS1/16S473J
R 895 898		RS1/16S184J
R 896 897		RS1/16S184J
R 911		RS1/10S101J
R 912		RS1/10S103J
R 921		RS1/10S103J
R 941		RS1/10S183J
R 943 973 974		RS1/16S472J
R 944 962 972		RS1/16S102J
R 952 955 992		RS1/10S473J
R 953 956 991		RS1/10S223J
R 961		RS1/16S124J
R 981		RD1/4PS221JL
R 983		RS1/10S221J

CAPACITORS

C 401 456 483 489 490 491 492 493 573 645	CKSQYB104K16
C 402 403	CKSQYB102K50
C 404 407 411 412 457 458 463 464 477 478	CEA100M16LL
C 405 406 408 409 431 432 433 434 453 454	CEA010M50LL
C 429 430 480 981	CEA2R2M50LL
C 435	CKSQYB183K25
C 451 452 484 485 519 601	CEA4R7M35LL
C 455 913 972 974	CEA470M10LL
C 459 480	CKSQYB822K50
C 461 462 572 872 873 874 875 876 877 878	CEA010M50LL
C 465 466	CKSQYB152K50
C 467 468 805	CKSQYB183K25
C 469 470 527	CKSQYB102K50
C 471 472	CEA2R2M35NPLL
C 473 474 503 504 509 510 602 647 648 665	CCSQCH101J50

=====Circuit Symbol & No.	Part Name=====	Part No.
C 475 476		CKSQYB333K50
C 479 481 482 664 813 814 859 860 861		CEA100M16LL
C 487 488 801		CCSQCH220J50
C 501 505 511 514 517 524 528 661		CKSQYB103K25
C 502		CCSQCH681J50
C 507 808		CKSQYB223K50
C 508		CKSQYB223K50
C 512	0.047µF	CCG1008
C 513	4.7µF/16V	CCH1165
C 516		CFTNA474J50
C 520		CCSQCH560J50
C 521		CKSQYB103K25
C 522		CKSQYB103K25
C 523		CKSYB224K16
C 525 526		CCSQCH270J50
C 551 552 553 554		CKSQYB224K16
C 567		CEAS220M16
C 568		CEAS010M50
C 569		CEA330M16LL
C 570 911	1000µF/16V	CCH1149
C 571	3300µF/16V	CCH1150
C 603 604		CCSQCH330J50
C 605		CCSQCH101J50
C 606		CCSQCH120J50
C 607 608		CKSQYB102K50
C 609 610		CKSQYB102K50
C 611		CKSQYB103K25
C 641 642 646		CKSQYB104K16
C 643 644		CKSYB224K16
C 652 667		CEAS221M10
C 663 807 982		CKSQYB473K16
C 666		CCSQCH101J50
C 802 803		CEA100M10NPLL
C 804 811 812		CCSQCH220J50
C 806		CKSQYB273K50
C 809		CKSQYB153K50
C 810 818 869 870		CKSQYB103K25
C 815 816 863 864 865 866		CCSQCH221J50
C 817		CEA220M10LL
C 819		CKSQYB224K16
C 851 852 854		CCSQCH220J50
C 853		CCSQCH220J50
C 855 856 857 858		CEA010M50LL
C 862		CEA100M16LL
C 867 868 912 991		CKSQYB103K25
C 871 973		CEA101M10LL
C 879		CEA010M50LL
C 901		CKSQYB104K16
C 921		CKSQYB473K16
C 971	470µF/16V	CCH1183
C 975	330µF/10V	CCH1181
C 981		CEAS331M16
C 983		CKSQYB104K16

Key Board Unit
Consists of
•Key Board P.C.Board
•Switch P.C.Board

Unit Number : CWM4047(DEH-P815/UC)
CWM4046(DEH-P815RDS/EW)
CWM4048(DEH-P813/ES)
Unit Name : Key Board Unit

MISCELLANEOUS

IC 901	PD5273A
IC 902	HD61602RH
IC 905	RS-30
Q 903	2SC2712
D 901 902	MA153-MC

=====Circuit Symbol & No.	Part Name=====	Part No.
D 903 904 905 906	Chip LED	CL170FGCD
D 907 908 909 910	Chip LED	CL170FGCD
D 911 912 913 914	Chip LED	CL170FGCD
D 915 916 917 918	Chip LED	CL170FGCD
D 919 920 921 922	Chip LED	CL170FGCD
D 923 924	Chip LED	CL170FGCD
D 926		MA151K-MH
L 901	Inductor	LCTA4R7K4532
L 902 903	Inductor	LCTB2R2K2125
X 901	Ceramic Resonator	CSS1084
S 901 906 907 912	Switch	CSG1043
S 902 903 904 905	Switch	CSG1041
S 908 909 910 911	Switch	CSG1041
S 913 918 920 921	Switch	CSG1043
S 914 915 916 917	Switch	CSG1041
S 919	Switch	CSG1043
S 930	Switch	CSN1027
	EL	CEL1424
LCD901	LCD (UC,EW)	CAW1261
LCD901	LCD (ES)	CAW1283

RESISTORS

R 901 902	RS1/2S222J
R 904	RS1/16S121J
R 905	RS1/8S151J
R 906 907 908 909 910 911 912 913 914 915	RS1/16S470J
R 920 923 935 936 955	RS1/16S473J
R 921 922 924 925 926 929 930 931	RS1/16S472J
R 933 957	RS1/16S102J
R 934	RA3C102J
R 938 942	RA4C102J
R 939	RS1/16S103J
R 946 947 952	RS1/4S391J
R 948 949 950 951	RS1/4S391J
R 958	RS1/16S2R2J

CAPACITORS

C 901 902	CSZSR100M6R3
C 914 921	CKSQYB104K16
C 915 916 917 919 920	CKSQYB473K16
C 922	CKSQYB273K50

Unit Number : CWE1358(DEH-P815/UC,P813/ES)
Unit Name : Tuner Unit

MISCELLANEOUS

IC 1	PA2021B
IC 52	LA1868M-PA
Q 1	3SK195
Q 2 73	2SC4099
Q 3 5 6 10 11 210	DTC124EU
Q 20	DTC143TU
Q 41 152	2SC4116
Q 71	2SC4099
Q 72	HN3C01F
Q 153	DTC124EU
Q 154	2SC4116
Q 201	FC12(12G)
D 1	1SV248
D 2 3 4	KV1410-F1
D 6 202	MA157-MR
D 31	1SV249
D 151	DTZ3R6A
D 152	DTZ3R0A
D 201	MA110-1A
D 203	SVC203CP

=====Circuit Symbol & No.	Part Name=====	Part No.
L 1	Inductor	LCTBR12K2125
L 2 51 52	Inductor	LCTA150K3225
L 4	Coil	CTC1068
L 71 72	Inductor	LCTB3R9K2125
L 201	Inductor	CTF1197
L 202	Coil	CTB1105
L 204	Inductor	LCTB101K2125
L 205	Inductor	LCTA330K3225
L 206	Inductor	CTF1198
T 1	Coil	CTC1099
T 2	Coil	CTE1064
T 3	Coil	CTE1098
T 51	Coil	CTE1067
T 52	Coil	CTE1068
T 71	Coil	CTE1058
T 202	Coil	CTB1104
T 203	Coil	CTE1106
T 204	Coil	CTE1107
T 205	Coil	CTE1110
TH 71	Thermistor DTN-T202V221KS	GGC1072
CF 1 51 52	Ceramic Filter	CTF-182
CF 201	Filter	CTF1027
CF 202	Ceramic Filter	CTF1321
X 151	Radiator	CSS1314
X 201	Radiator	CSS1339
VR 51 152 156	Semi-fixed 47kΩ(B)	CCP1185
VR 52	Semi-fixed 22kΩ(B)	CCP1183
AR 1		DSP-141N
RESISTORS		
R 1 3 10 113 114		RS1/16S223J
R 2		RS1/16S271J
R 5		RS1/16S153J
R 6		RS1/16S820J
R 7 13		RS1/16S563J
R 9 59 66		RS1/16S473J
R 11		RS1/16S474J
R 14 15 18 217		RS1/16S563J
R 21		RS1/16S221J
R 22		RS1/16S560J
R 25		RS1/16S273J
R 26		RS1/16S152J
R 27		RS1/16S223J
R 30 168		RS1/16S183J
R 31		RS1/16S181J
R 41 42 75 156 165 216		RS1/16S103J
R 43 74		RS1/16S153J
R 44		RS1/16S0R0J
R 45 76 79		RS1/16S331J
R 48		RS1/16S473J
R 50		RS1/16S121J
R 54 209 222		RS1/16S822J
R 55		RS1/16S331J
R 56 57 201		RS1/16S822J
R 58		RS1/16S203J
R 63		RS1/16S334J
R 67		RS1/16S123J
R 68		RS1/16S681J
R 69		RS1/16S331J
R 70		RS1/16S0R0J
R 71		RS1/16S471J
R 72 77 80 101 213		RS1/16S222J
R 73		RS1/16S222J
R 78		RS1/16S391J
R 102		RS1/16S105J

=====Circuit Symbol & No.	Part Name=====	Part No.
R 103 155		RS1/16S104J
R 104		RS1/16S472J
R 112		RS1/16S102J
R 153 245		RS1/16S562J
R 154		RS1/16S103J
R 157		RS1/16S104J
R 158		RS1/16S104J
R 159		RS1/16S103J
R 160		RS1/16S154J
R 161 166 214		RS1/16S333J
R 164		RS1/16S183J
R 167 230		RS1/16S333J
R 169		RS1/16S0R0J
R 203		RS1/16S102J
R 205		RS1/16S823J
R 207		RS1/16S225J
R 215		RS1/16S330J
R 220		RS1/16S100J
R 221		RS1/16S273J
R 241		RS1/16S471J
R 242		RS1/16S122J
CAPACITORS		
C 1 2		CCSRCH220J50
C 3 31 53 72 210 248		CKSRYF473Z25
C 4		CCSRTH050D50
C 5		CCSRCH270J50
C 7		CCSRCH030C50
C 8 32 241 242		CKSRYB222K50
C 9		CCSRCH470J50
C 10		CCSRSH080D50
C 11 14 19 20 21 22 41 43 51 61		CKSRYB103K50
C 12 13		CCSRCH070D50
C 15		CKSRYF104Z25
C 16		CCSRCH050D50
C 17		CCSRRH100D50
C 18		CCSRRH080D50
C 23		CEV010M50
C 24 163 213		CKSRYB223K25
C 25 104		CKSRYB682K50
C 28		CEV330M10
C 29 65 67 68 69 101		CKSRYB103K50
C 33 34 216		CCSRCH100D50
C 54		CCSRCH101J50
C 56		CCSRPH910J50
C 57		CCSRPH470J50
C 58		CKSYB474K16
C 60		CCSRCH560J50
C 62		CCSRCH101J50
C 63		CCSRCH020D50
C 70 105 155 156 201 203 207		CKSRYB103K50
C 71		CKSRYB103K50
C 102		CKSYB683K25
C 103		CKSRYB102K50
C 108		CEVNP100M10
C 109 233		CKSRYB332K50
C 110		CKSRYB332K50
C 113		CKSRYB223K25
C 157 212 231 234		CEV100M16
C 151 152		CKSRYB273K16
C 153		CKSQYB104K16
C 154 158 211		CKSYB105K16
C 159		CKSQYB104K16
C 160		CKSYB473K50
C 161		CCSRCH221J50
C 162		CEV010M50
C 165		CEV010M50
C 204		CCSRTH101J50

=====Circuit Symbol & No. Part Name=====										Part No.
C	206									CCSRTH820J50
C	208									CEV470M16
C	209	220	223	225	227	228				CKSRYB103K50
C	214									CKSRYB153K25
C	215	235								CKSRYB103K50
C	218									CEV4R7M35
C	219									CKSQYB473K16
C	221									CCSRCH330J50
C	222									CCSRCH270J50
C	226									CEV4R7M35
C	229									CKSYB684K16
C	230									CKSRYB472K50
C	232									CCSRCH390J50

Unit Number : CWE1356(DEH-P815RDS/EW)
Unit Name : Tuner Unit

MISCELLANEOUS

IC	1										PA2021B
IC	51										HA12186F
IC	52										LA1868M-PA
Q	1										3SK195
Q	2	73									2SC4099
Q	3	5	6	10	11	51	87	210			DTC124EU
Q	20										DTC143TU
Q	41	86	152								2SC4116
Q	71										2SC4099
Q	72										HN3C01F
Q	83										2SA1586
Q	84	153	173								DTC124EU
Q	85	154									2SC4116
Q	141										IMX1
Q	142										DTA114TU
Q	171										IMX1
Q	172										IMD1
Q	201										FC12(12G)
D	1										1SV248
D	2	3	4								KV1410-F1
D	6	202									MA157-MR
D	31										1SV249
D	81	84									HVR320
D	82	83									HVR320
D	86	171									MA110-1A
D	151										DTZ3R6A
D	152										DTZ3R0A
D	201										MA110-1A
D	203										SVC203CP
L	1									Inductor	LCTBR12K2125
L	2	51	52							Inductor	LCTA150K3225
L	4									Coil	CTC1068
L	71	72								Inductor	LCTB3R9K2125
L	201									Inductor	CTF1197
L	202									Coil	CTB1105
L	204									Inductor	LCTB101K2125
L	205									Inductor	LCTA330K3225
L	206									Inductor	CTF1198
T	1									Coil	CTC1099
T	2									Coil	CTE1064
T	3									Coil	CTC1130
T	51									Coil	CTE1087
T	52									Coil	CTE1088
T	71									Coil	CTE1058
T	81									Coil	CTE1093
T	82									Coil	CTE1097
T	83	84								Coil	CTE1098
T	85									Coil	CTE1094
T	202									Coil	CTB1104
T	203									Coil	CTE1106

=====Circuit Symbol & No. Part Name=====										Part No.
T	204									Coil	CTE1107
T	205									Coil	CTE1110
TC	1									Trimmer	CCL1019
TH	71									Thermistor	DTN-T202V221KS
CF	1	51	52							Ceramic Filter	CTF1057
CF	201									Filter	CTF1027
CF	202									Ceramic Filter	CTF1321
X	81									Radiator	CSS1340
X	151									Radiator	CSS1314
X	201									Radiator	CSS1339
VR	51	81	152							Semi-fixed 47kΩ(B)	CCP1185
VR	52									Semi-fixed 22kΩ(B)	CCP1183
VR	71									Semi-fixed 2.2kΩ(B)	CCP1177
AR	1										DSP-141N

RESISTORS

R	1	3	10	113	114	131	133	171	172		RS1/16S223J
R	2										RS1/16S271J
R	5	144									RS1/16S153J
R	6										RS1/16S820J
R	7	13									RS1/16S563J
R	9	59	66								RS1/16S473J
R	11										RS1/16S474J
R	14	15	18	217							RS1/16S563J
R	21										RS1/16S221J
R	22										RS1/16S560J
R	25	83	126								RS1/16S273J
R	26	88									RS1/16S152J
R	27	123	141	149	173	174	177				RS1/16S223J
R	30	93	168								RS1/16S183J
R	31										RS1/16S181J
R	41	42	75	137	138	156	165	216			RS1/16S103J
R	43	74	89								RS1/16S153J
R	44	159									RS1/16S0R0J
R	45	76	79								RS1/16S331J
R	48										RS1/16S473J
R	50										RS1/16S121J
R	54	209	222								RS1/16S822J
R	55	81									RS1/16S681J
R	56	57	140	201							RS1/16S822J
R	58										RS1/16S243J
R	61	166	179	214							RS1/16S333J
R	63										RS1/16S334J
R	67										RS1/16S123J
R	68										RS1/16S681J
R	69										RS1/16S331J
R	70										RS1/16S0R0J
R	71										RS1/16S471J
R	72	77	80	97	101	213					RS1/16S222J
R	73										RS1/16S151J
R	78	241									RS1/16S471J
R	82	90	122	154							RS1/16S103J
R	84	85									RS1/16S393J
R	86	87									RS1/16S470J
R	91										RS1/16S512J
R	92										RS1/16S152J
R	94										RS1/16S183J
R	96										RS1/16S183J
R	98	139									RS1/16S123J
R	100										RS1/16S182J
R	102										RS1/16S564J
R	103	155									RS1/16S104J
R	104	132	136								RS1/16S472J
R	121	142	143								RS1/16S102J
R	124										RS1/16S472J
R	125										RS1/16S182J

=====Circuit Symbol & No. Part Name=====										Part No.
R	127	128								RS1/16S124J
R	129	146	147							RS1/16S683J
R	134									RS1/16S682J
R	135									RS1/16S272J
R	145									RS1/16S562J
R	153	245								RS1/16S562J
R	157	176								RS1/16S104J
R	158									RS1/16S333J
R	160									RS1/16S105J
R	164									RS1/16S392J
R	167	230								RS1/16S333J
R	175									RS1/16S472J
R	178									RS1/16S334J
R	203									RS1/16S102J
R	205									RS1/16S823J
R	207									RS1/16S225J
R	215									RS1/16S150J
R	220									RS1/16S100J
R	221									RS1/16S273J
R	242									RS1/16S122J

CAPACITORS

C	1	2									CCSRCH220J50
C	3	31	53	72	210	248					CKSRYF473Z25
C	5										CCSRCH270J50
C	7										CCSRCH030C50
C	8	32	55	241	242						CKSRYB222K50
C	9										CCSRCH470J50
C	10										CCSRSH080D50
C	11	14	19	20	21	22	41	43	51	61	CKSRYB103K50
C	12	13									CCSRCH050D50
C	15	91									CKSRYF104Z25
C	16										CCSRCH050D50
C	17										CCSRRH100D50
C	18										CCSRRH080D50
C	23										CEV010M50
C	24	81	163	213							CKSRYB223K25
C	25	104									CKSRYB682K50
C	28										CEV330M10
C	29	65	66	67	68	69	87	96	99	101	CKSRYB103K50
C	33	34	216								CCSRCH100D50
C	54										CCSRCH101J50
C	56										CCSRPH910J50
C	57										CCSRPH470J50
C	58										CKSYB274K16
C	60										CCSRCH560J50
C	62	129	172								CCSRCH101J50
C	63										CCSRCH020D50
C	70	105	132	140	155	156	174	201	203	207	CKSRYB103K50
C	82	98	146	159							CKSQYB104K16
C	83										CCSRCH150J50
C	84										CCSRCH070D50
C	85										CKSYB105K16
C	86										CCSRCH100D50
C	88	100									CKSRYB472K50
C	89	92									CCSRRH121J50
C	90										CKSRYB333K16
C	93										CKSRYB333K16
C	95	109	144	233							CKSRYB332K50
C	97	121									CCSRRH560J50
C	102										CKSYB474K16
C	103										CKSRYB102K50
C	108										CEVNP100M10
C	110										CCSRCH331J50
C	113										CKSRYB223K25
C	122										CKSQYB683K16
C	123	125	157	212	231	234					CEV100M16

=====Circuit Symbol & No. Part Name=====										Part No.
C	124	143								CKSYB105K16
C	126	147								CKSRYB332K50
C	127	131								CCSRCH391J50
C	130	136	145	173	175	215	235			CKSRYB103K50
C	133									CEV100M16
C	134									CKSRYF104Z25
C	137									CKSRYB152K50
C	141	208								CEV470M16
C	142									CEV2R2M50
C	151	152								CKSRYB183K25
C	153									CKSQYB104K16
C	154	158	211							CKSYB105K16
C	160									CKSYB473K50
C	161									CKSRYB471K50
C	165									CEV2R2M50
C	171									CKSRYB681K50
C	176									CKSRYF473Z25
C	177									CKSRYB102K50
C	180									CKSRYB223K25
C	204									CCSRTH101J50
C	206									CCSRTH820J50
C	209	220	223	225	227	228				CKSRYB103K50
C	214									CKSRYB153K25
C	218									CEV4R7M35
C	219									CKSQYB473K25
C	221									CCSRCH330J50
C	222									CCSRCH270J50
C	226									CEV4R7M35
C	229									CKSYB684K16
C	230									CKSRYB472K50
C	232									CCSRCH390J50

Unit Number :
Unit Name : Detector P.C.Board

P	1	2		Photo Transistor	PT4800

Miscellaneous Parts List

M	1	Motor Unit(Spindle)	CXA7001
M	2	Motor Unit(Carriage)	CXA7150
M	3	Motor Unit(Loading)	CXA6456
		PU Unit	CGY1031

7. CIRCUIT DIAGRAM AND PATTERN

7.1 TUNER AMP UNIT (DEH-P815/UC)

● **Connection Diagram**

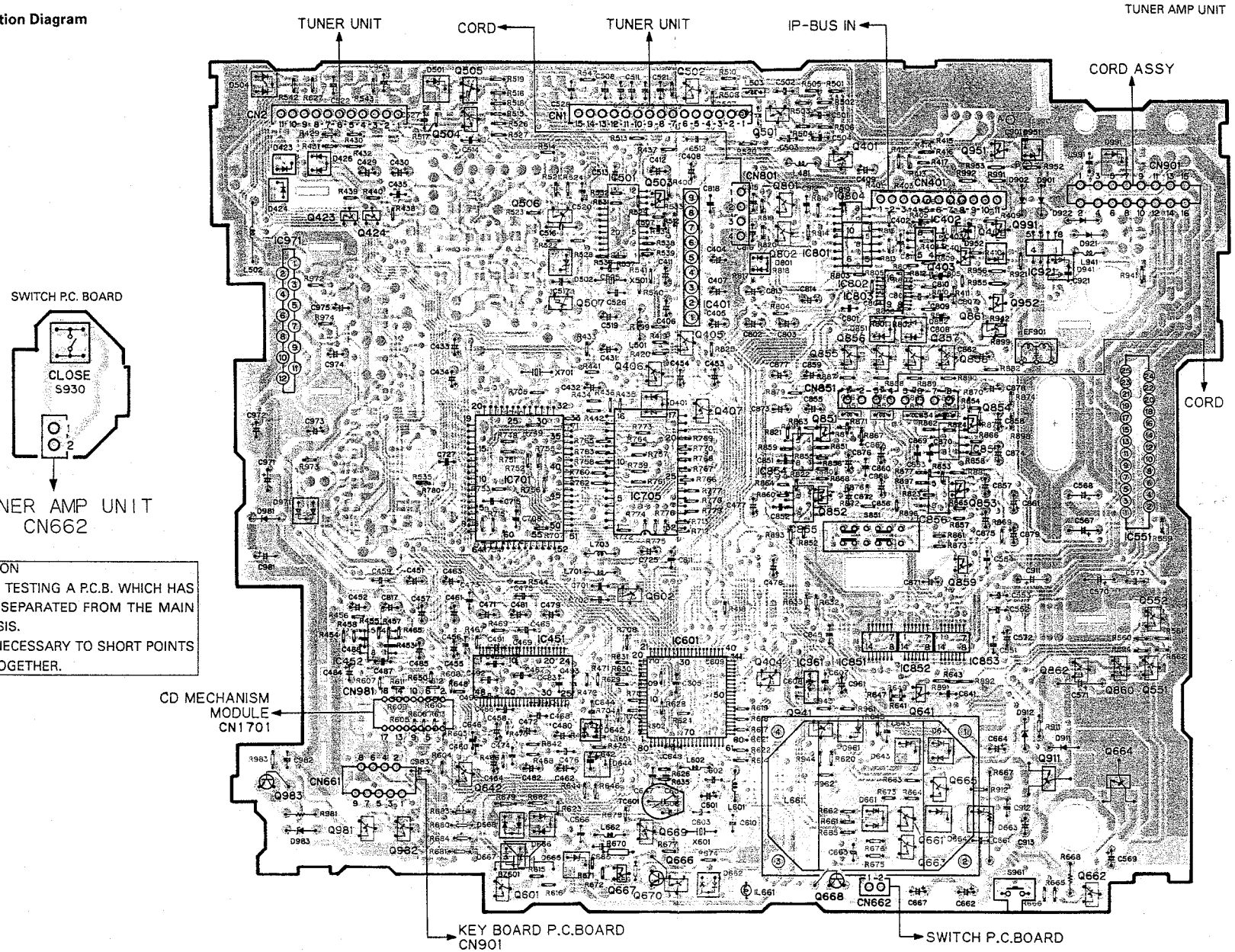


Fig.19

6. BLOCK DIAGRAM

● **DEH-P815/UC**

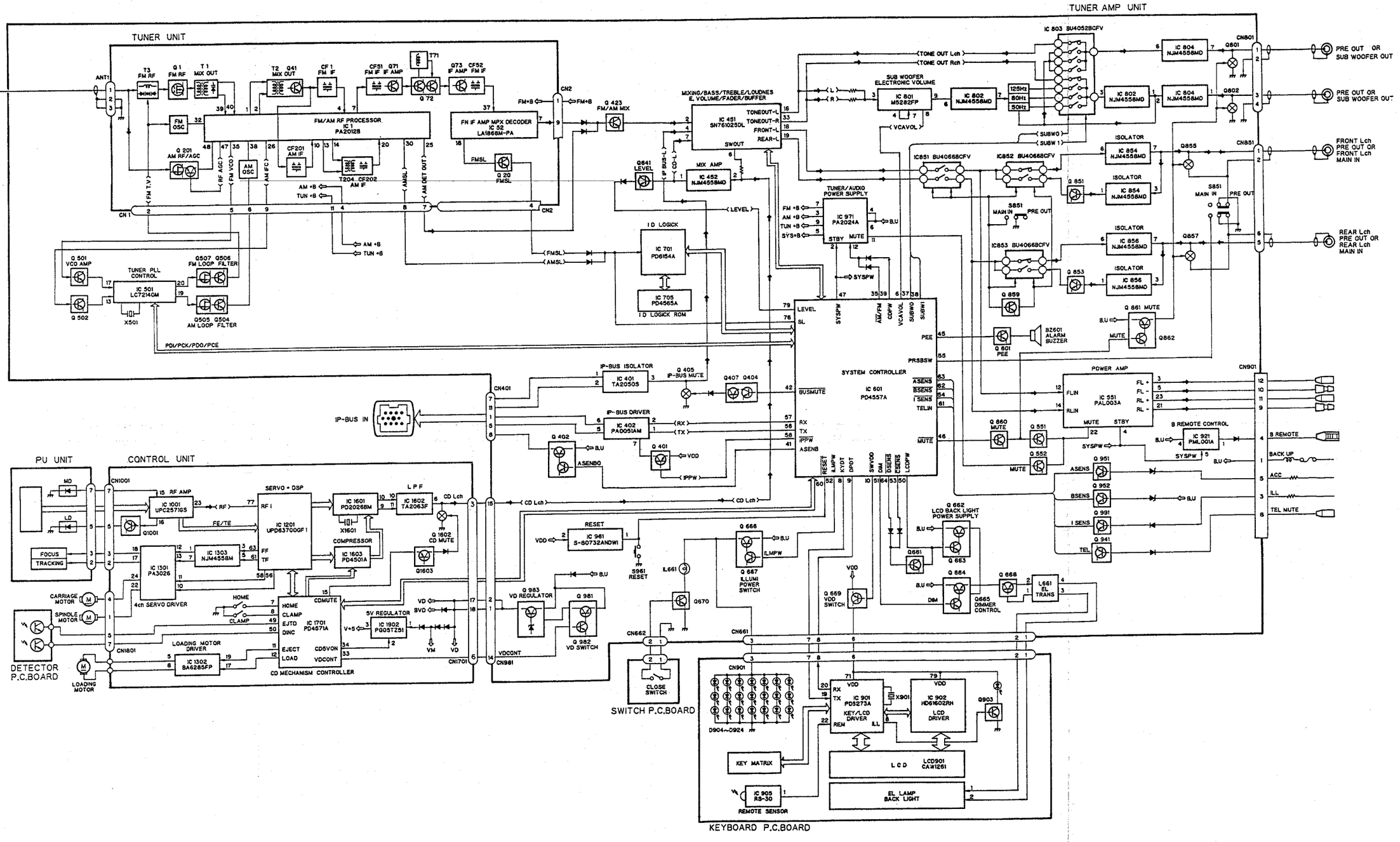


Fig.17

● **DEH-P815RDS/EW**

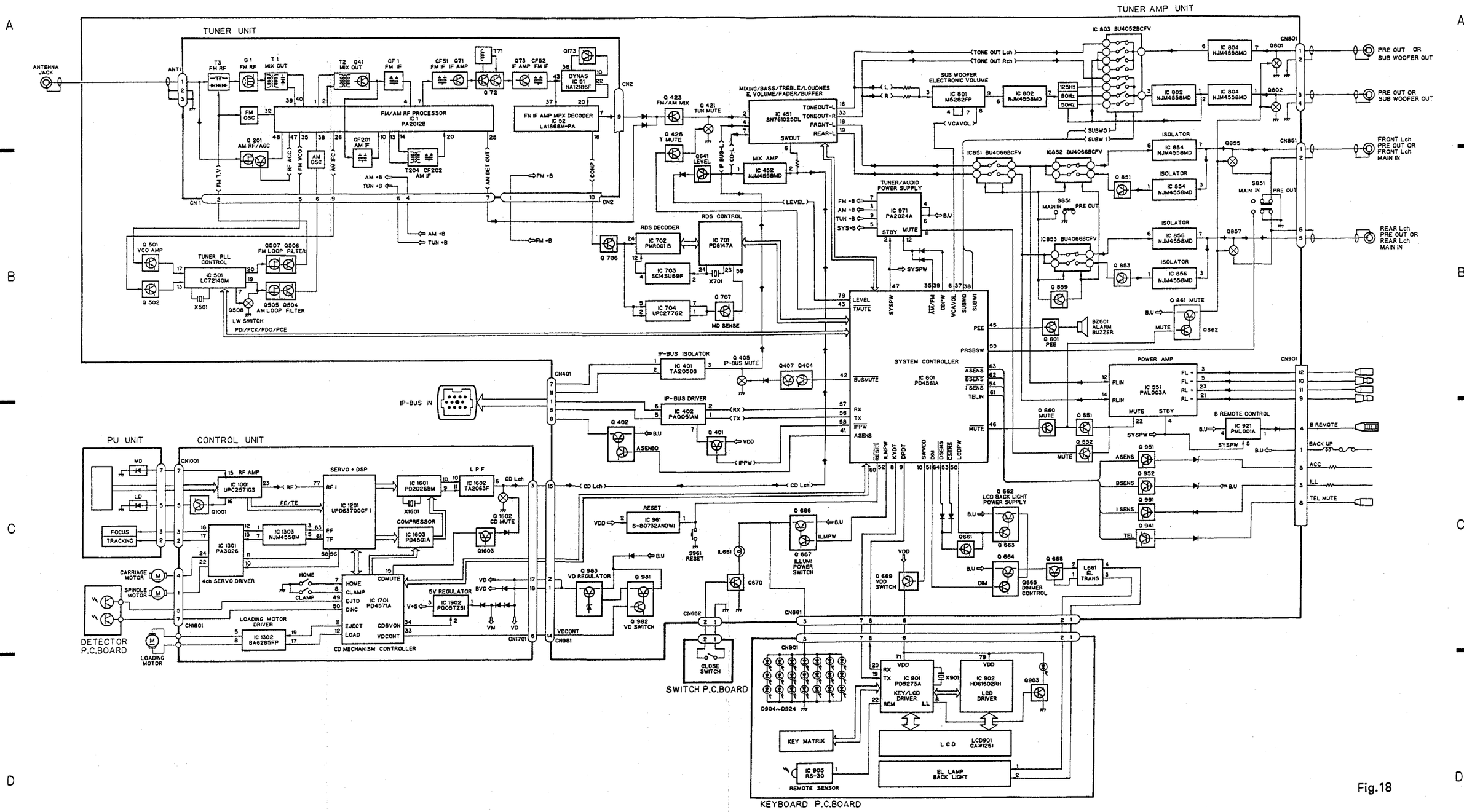
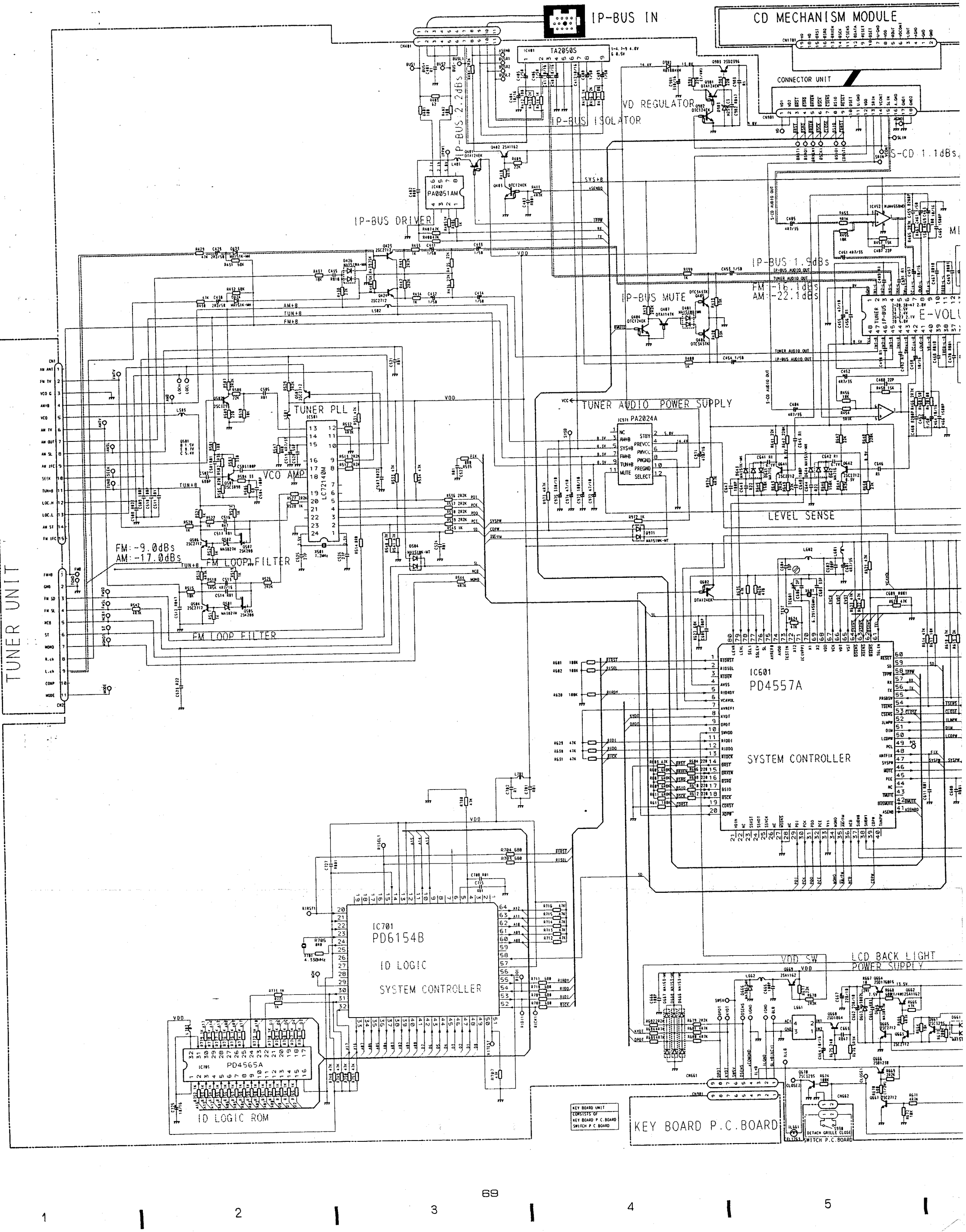
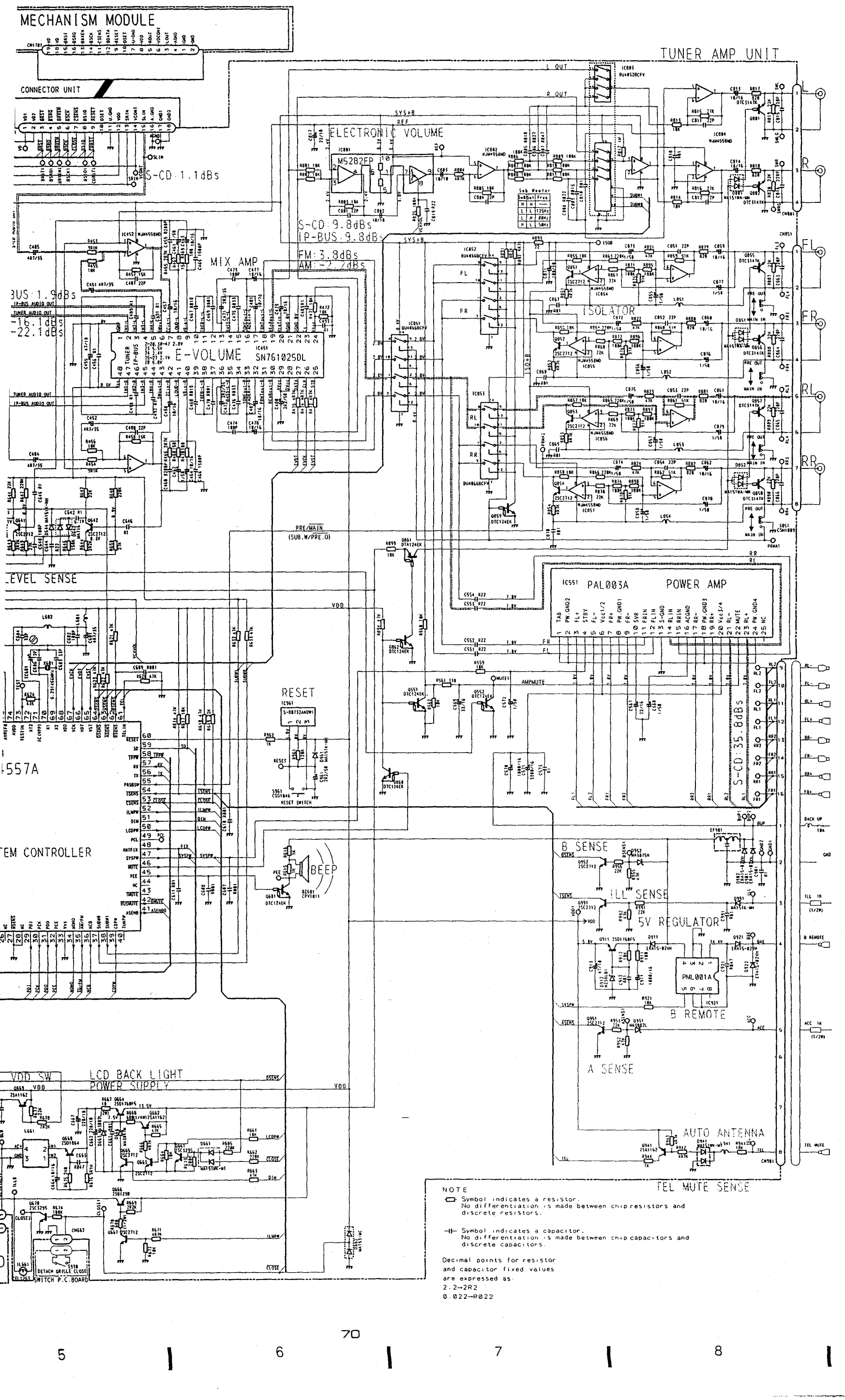


Fig.18

Diagram


IP-BUS IN
CD MECHANISM MODULE
CONNECTOR UNIT
IP-BUS 2.2dBs
IP-BUS ISOLATOR
VD REGULATOR
IP-BUS DRIVER
S-CD 1.1dBs
IP-BUS 1.9dBs
IP-BUS MUTE
FM:-16.1dB
AM:-22.1dB
TUNER AUDIO POWER SUPPLY
TUNER PLL
VCO AMP
FM LOOP FILTER
FM:-9.0dBs
AM:-17.0dBs
LEVEL SENSE
SYSTEM CONTROLLER
IC601
PD4557A
IC701
PD6154B
ID LOGIC
SYSTEM CONTROLLER
ID LOGIC ROM
IC705
PD4565A
VDD SW
LCD BACK LIGHT
POWER SUPPLY
KEY BOARD UNIT
CONSISTS OF
KEY BOARD P.C.BOARD
SWITCH P.C.BOARD
KEY BOARD P.C.BOARD
DETACH GRILLE CLOSE
TUNER UNIT



NOTE

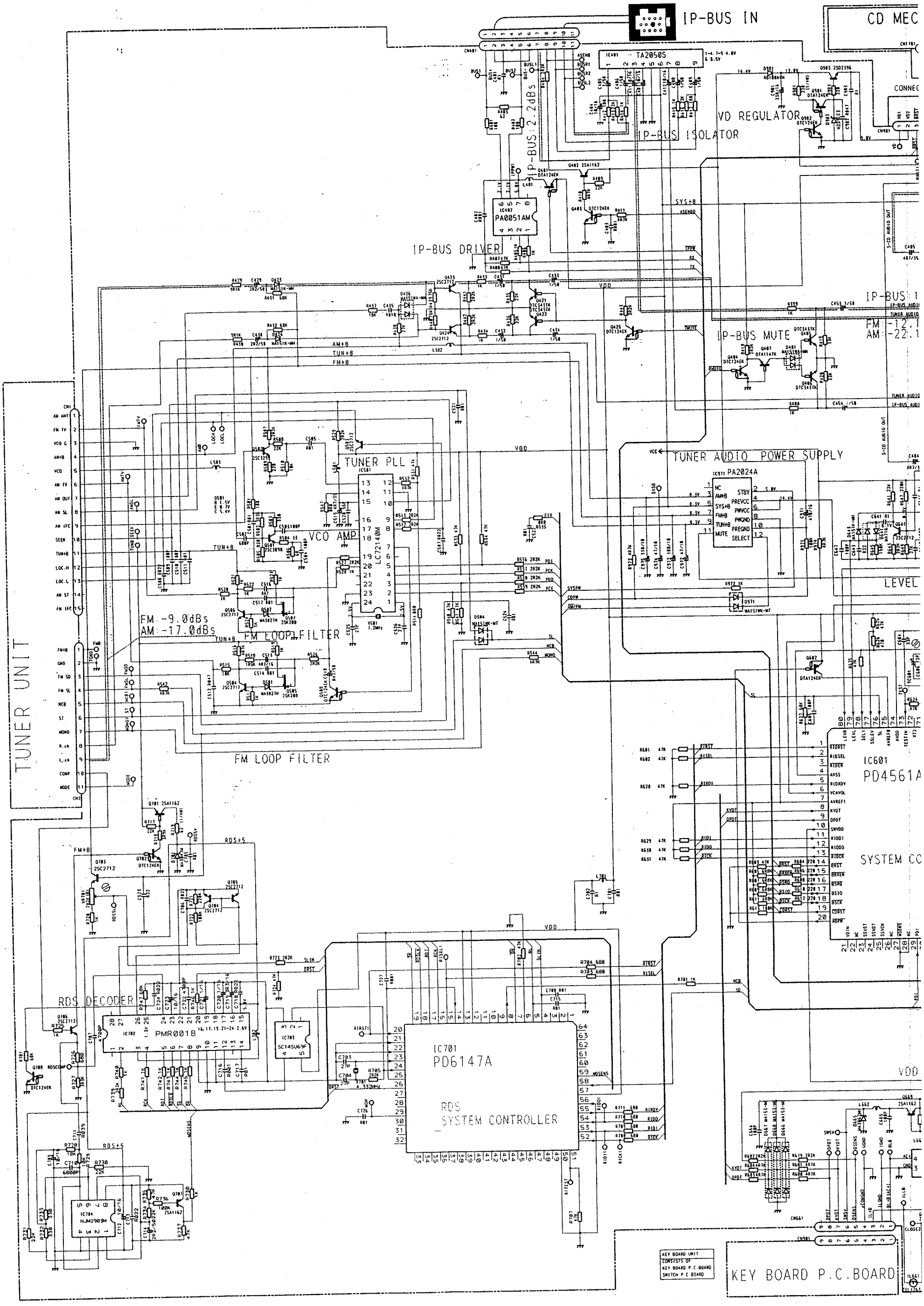
- Symbol indicates a resistor.
  No differentiation is made between chip resistors and discrete resistors.
- Symbol indicates a capacitor.
  No differentiation is made between chip capacitors and discrete capacitors.

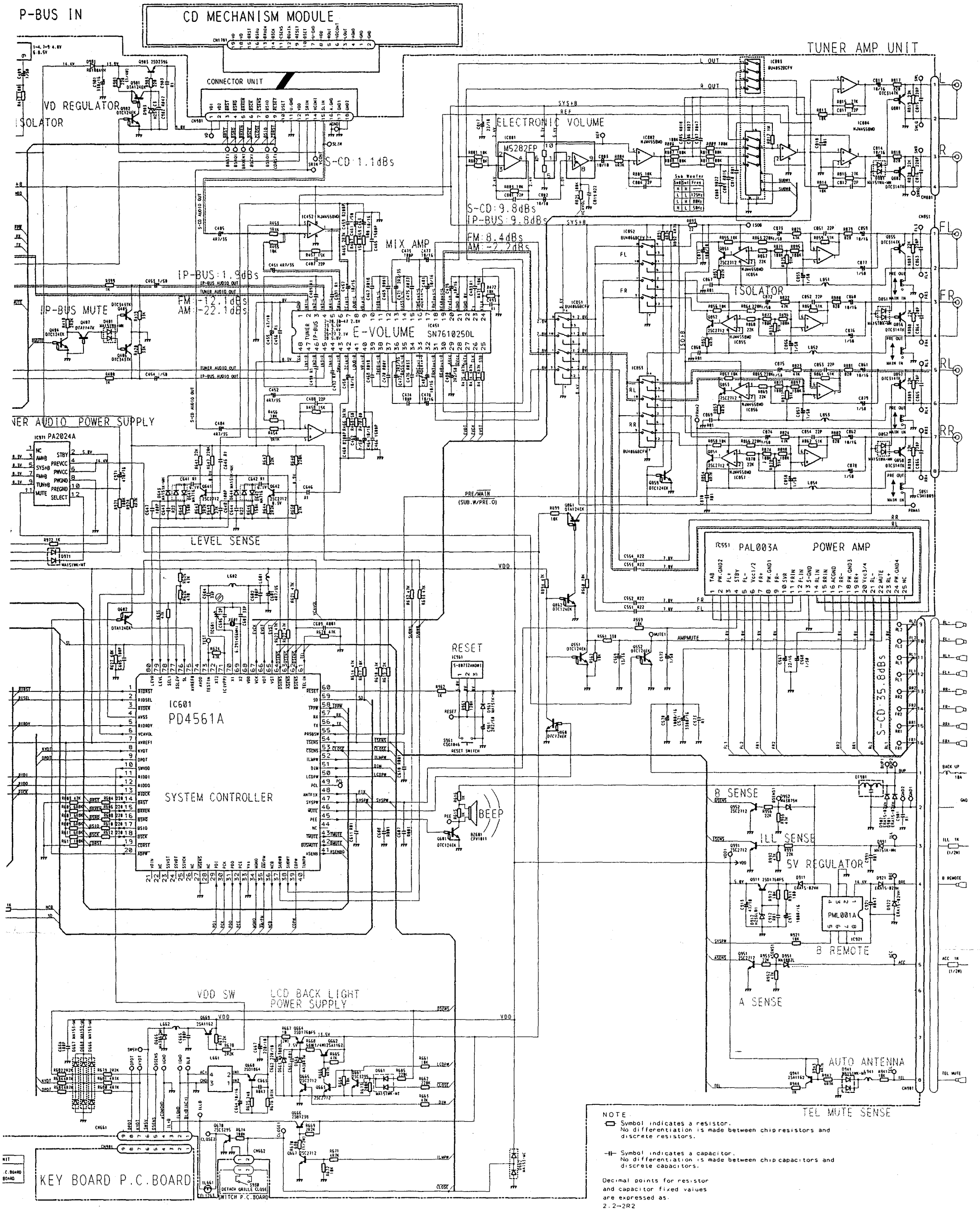
Decimal points for resistor and capacitor fixed values are expressed as:
2.2→2R2
0.022→R022

Fig.20

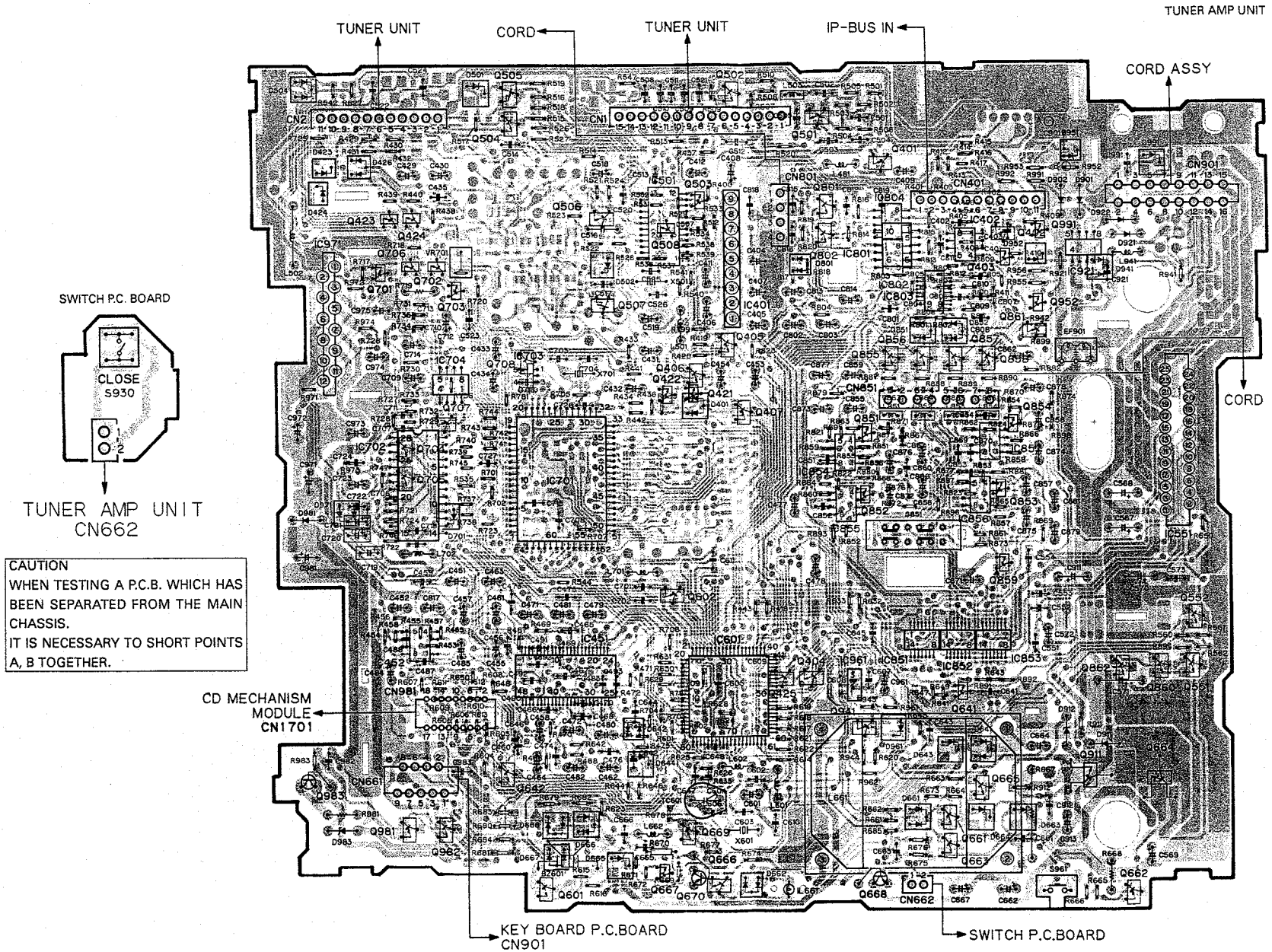
7.2 TUNER AMP UNIT (DEH-P815RDS/EW)

● **Circuit Diagram**




P-BUS IN
CD MECHANISM MODULE
CONNECTOR UNIT
TUNER AMP UNIT
VD REGULATOR
ISOLATOR
ELECTRONIC VOLUME
M5282FP
S-CD 1.1dBs
S-CD 9.8dBs
IP-BUS 9.8dBs
FM 8.4dBs
AM -2.2dBs
MIX AMP
IP-BUS 1.9dBs
FM -12.1dBs
AM -22.1dBs
IP-BUS MUTE
IF-VOLUME SN7610250L
POWER AUDIO POWER SUPPLY
PA2024A
LEVEL SENSE
PRE/MAIN
(SUB.W/PRE.O)
POWER AMP
PAL003A
RESET
IC961
S-80732ANOMB
RESET SWITCH
IC601
PD4561A
SYSTEM CONTROLLER
BEEP
B SENSE
ILL SENSE
5V REGULATOR
PML001A
B REMOTE
A SENSE
AUTO ANTENNA
TEL MUTE SENSE
VDD SW
LCD BACK LIGHT
POWER SUPPLY
KEY BOARD P.C.BOARD
SWITCH P.C.BOARD
DETACH GRILLE CLOSE
BACK UP 10A
ILL 1K (1/2W)
ACC 1K (1/2W)
B REMOTE
TEL MUTE
S-CD 35.8dBs
NOTE
Symbol indicates a resistor.
No differentiation is made between chip resistors and discrete resistors.
Symbol indicates a capacitor.
No differentiation is made between chip capacitors and discrete capacitors.
Decimal points for resistor and capacitor fixed values are expressed as.
2.2→2R2
0.022→R022

● **Connection Diagram**

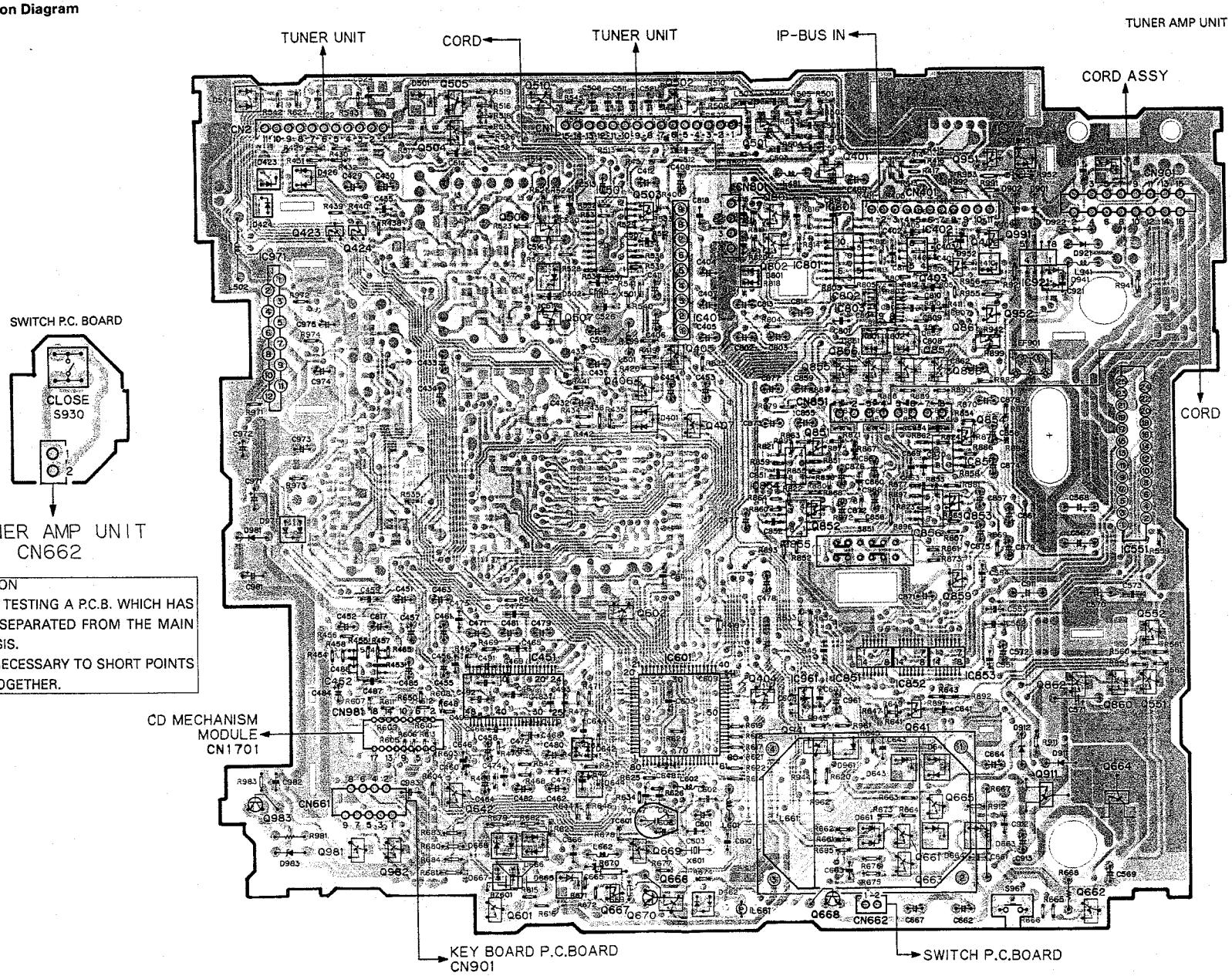


ADJ	IC, Q
	Q505 Q502
	Q504 Q501
	Q401
	Q503 IC501 IC804 Q801
	Q423 Q424 Q506 Q402 Q991 Q802 IC802 Q508
VR701	IC401 IC801 IC402 IC921 Q701 Q706 Q702 Q403
	Q703 IC803 Q952
	IC971 Q507 Q861 Q405
	Q855 Q856 Q857 Q858 Q708 IC703 Q406
	IC704 Q422 Q421
	Q707 Q407 Q854
	Q704 Q851 IC857 IC551 IC854
	Q705 IC702 IC701
	IC855 Q852 IC856 Q853
	Q859
	Q602 Q552
	IC452 IC851 IC852 IC853
	Q862 Q860 Q551
	IC451 Q425 Q404 IC961 IC601 Q641
	Q941
	Q911 Q664
TC601	Q983 Q642 Q665
	Q661
	Q981 Q982 Q669 Q663
	Q667 Q666 Q668
	Q601 Q670 Q662

Fig.22

7.3 TUNER AMP UNIT (DEH-P813/ES)

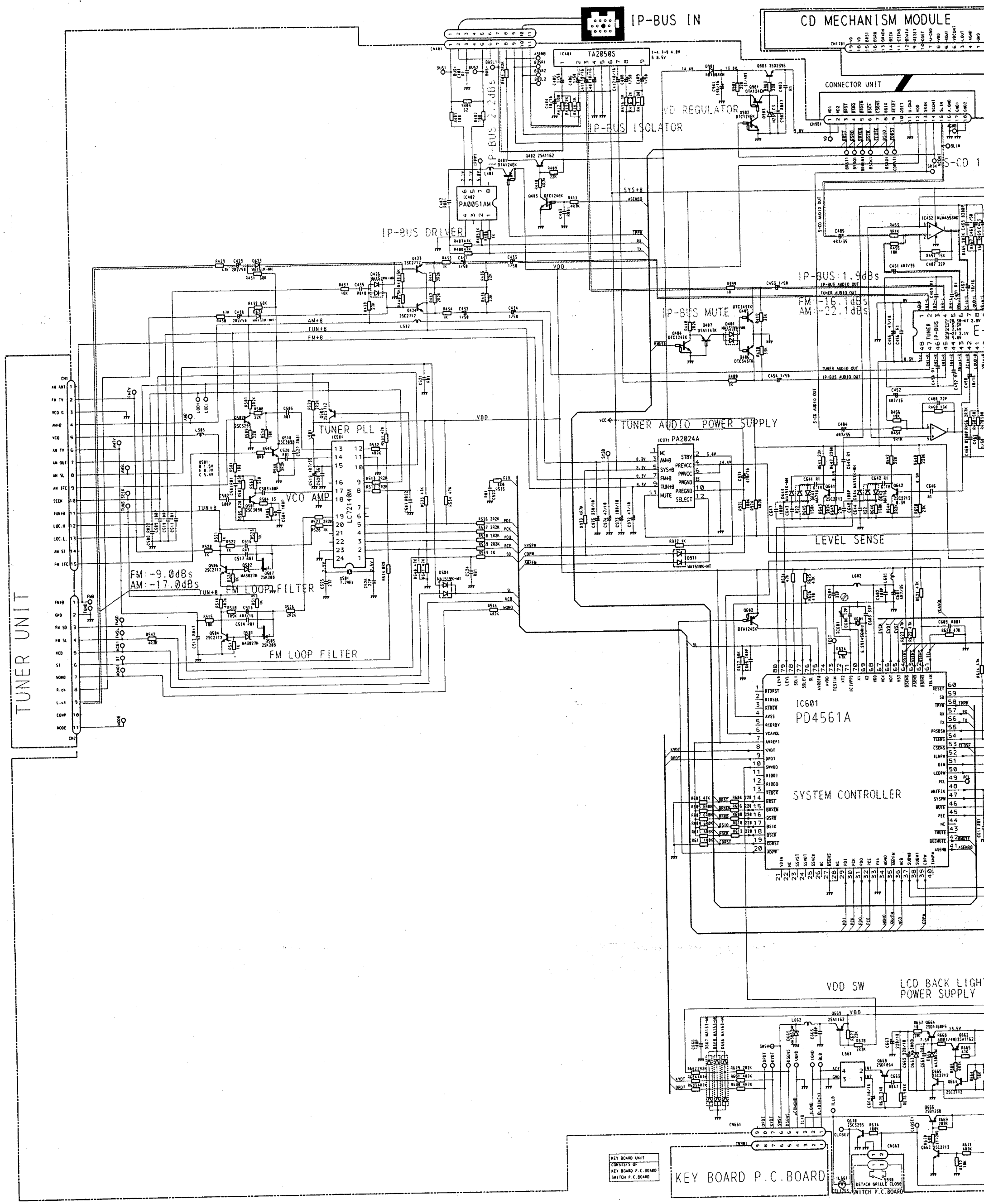
● **Connection Diagram**

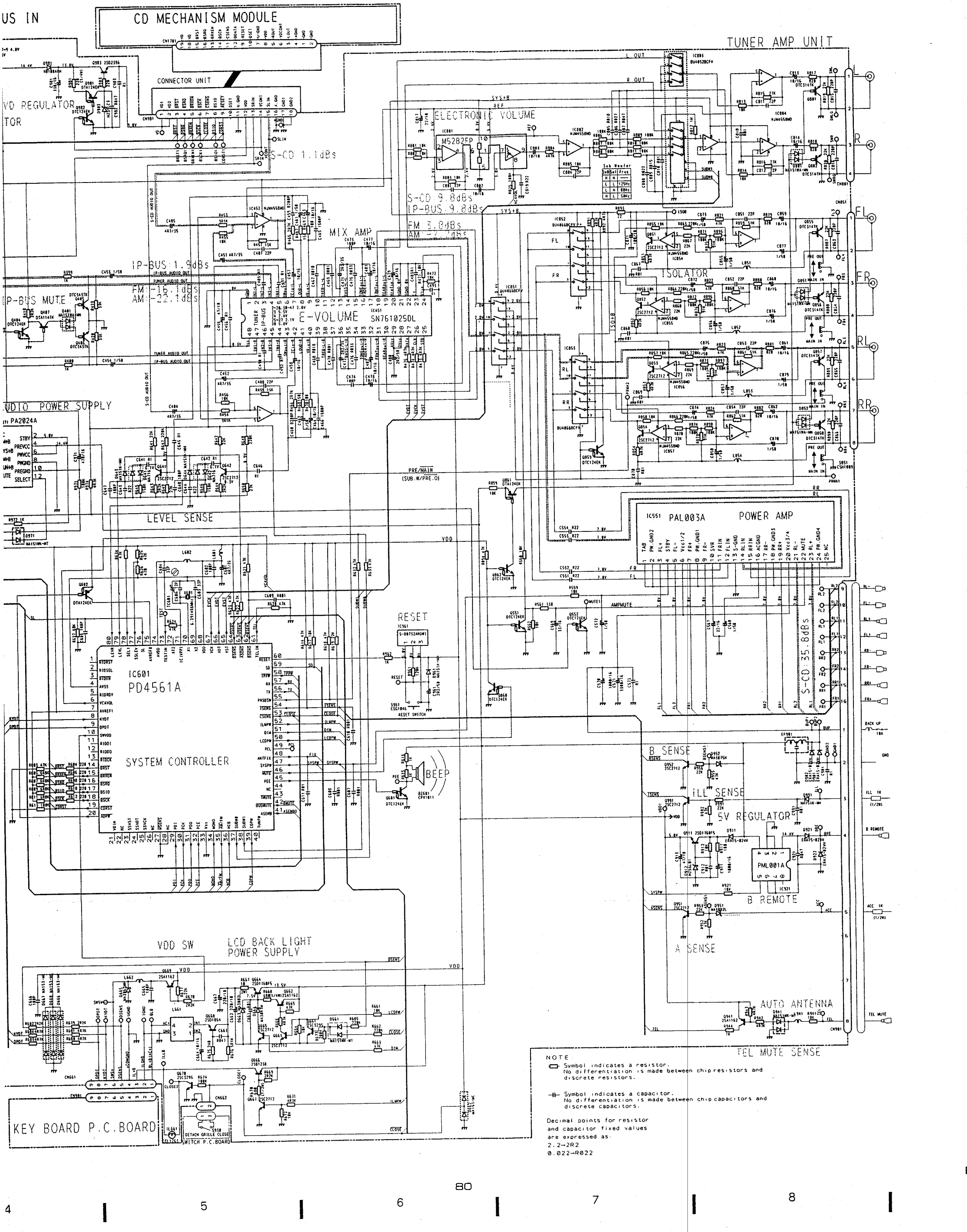


ADJ	IC, Q
	Q505 Q510 Q502
	Q504 Q501
	Q401 Q951
	Q503 IC501 IC804 Q801
	Q423 Q424 Q506 Q402 Q991 Q802 IC802
	IC401 IC801 IC402 IC921 Q403
	IC803 Q952
	IC971 Q507 Q861 Q405
	Q855 Q856 Q857 Q858 Q406
	Q407 Q854 Q851 IC857 IC551 IC854
	IC855 Q852 IC856 Q853
	Q859
	Q602 Q552
	IC452 IC851 IC852 IC853
	Q862 Q860 Q551
	IC451 Q404 IC961 IC601 Q641
	Q941
	Q911 Q664
TC601	Q983 Q642 Q665
	Q661
	Q981 Q982 Q669 Q663
	Q667 Q666 Q668
	Q601 Q670 Q662

Fig.23

cuit Diajram





NOTE

Symbol indicates a resistor.
No differentiation is made between chip resistors and discrete resistors.

Symbol indicates a capacitor.
No differentiation is made between chip capacitors and discrete capacitors.

Decimal points for resistor and capacitor fixed values are expressed as.
2.2→2R2
0.022→R022

FM SIGNAL

AM SIGNAL

NOTE:

Symbol indicates a resistor.
No differentiation is made between chip r
discrete resistors.

Symbol indicates a capacitor.
No differentiation is made between chip c
discrete capacitors.

Decimal points for resistor
and capacitor fixed values
are expressed as:
2.2→2R2
0.022→R022

FM FRONT END

AM OSC

FM OSC

AM DET

AM RF

IF AMP

PA2021B

IC1

10.7MHz

10.71MHz

TUNER AMP UNIT
CN1

NOTE :

Symbol indicates a resistor.
No differentiation is made between chip resistors and discrete resistors.

Symbol indicates a capacitor.
No differentiation is made between chip capacitors and discrete capacitors.

Decimal points for resistor
and capacitor fixed values
are expressed as:
2.2→2R2
0.022→R022

AM OSC
FM OSC
AM DET
IF AMP
DET
PNS
MPX
IC1
PA2021B
IC2
LA1868M-PA
10.7MHz
10.71MHz
TUNER AMP UNIT
CN1
TUNER AMP UNIT
CN2

● Connection Diagram

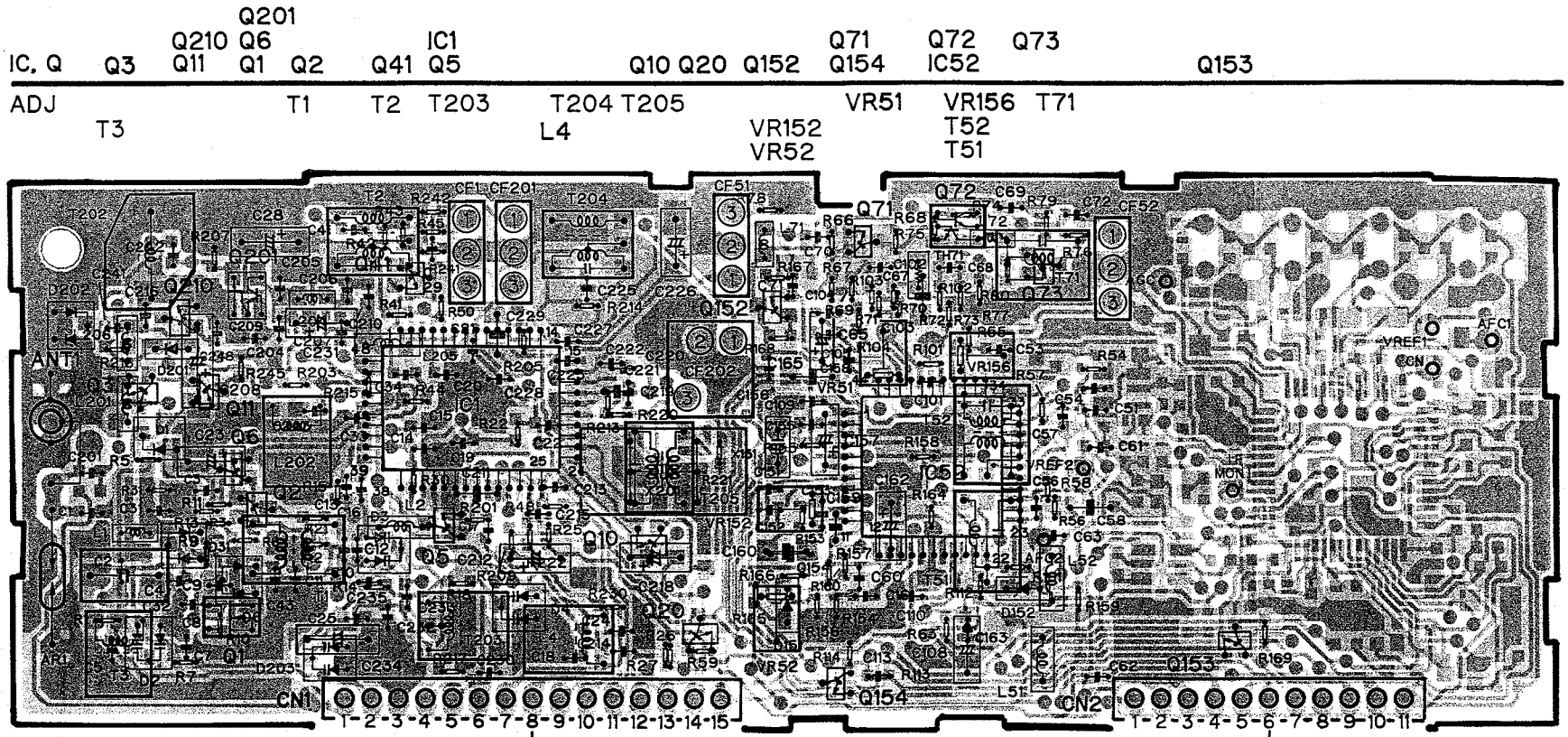
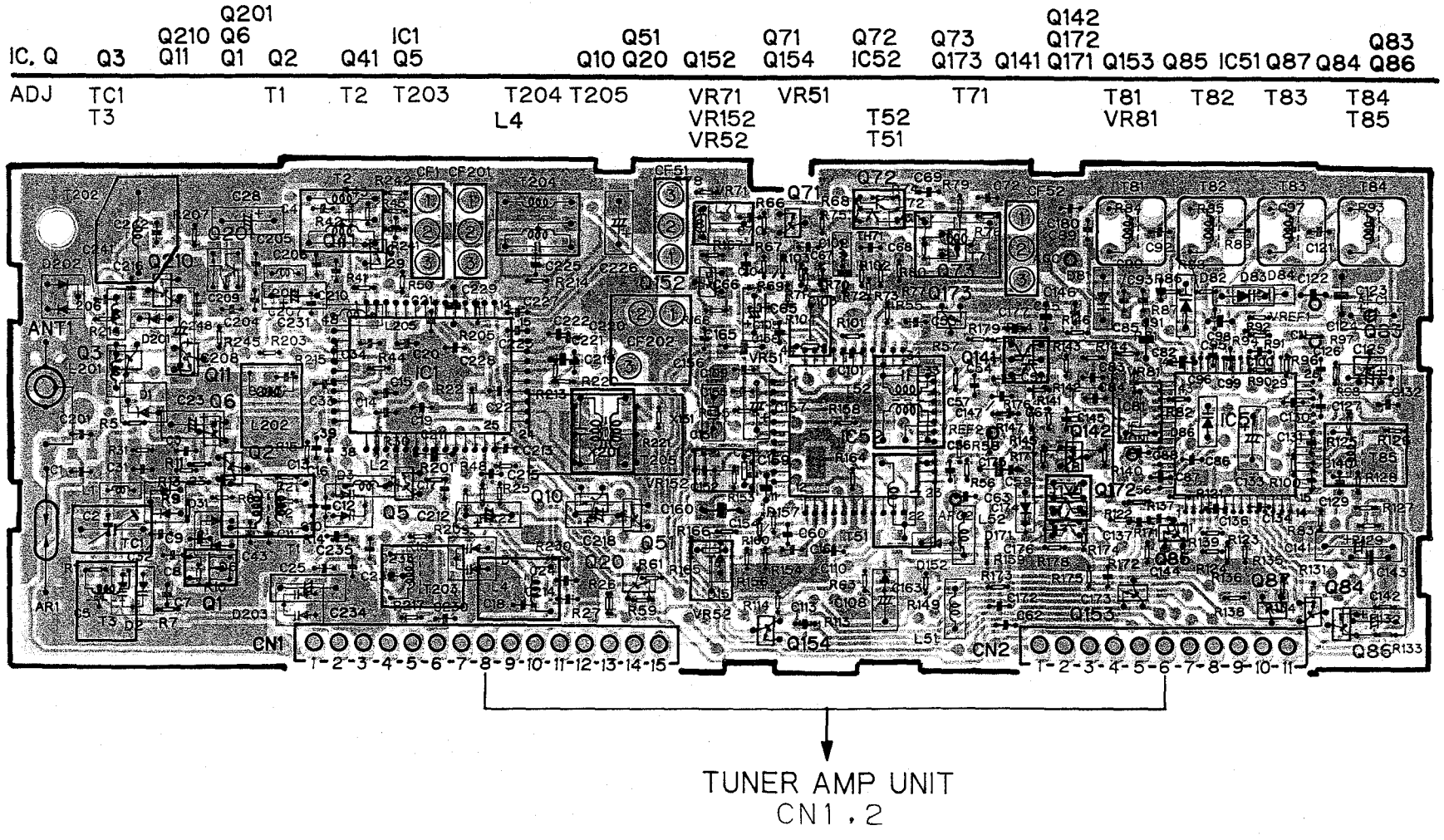


Fig.26

7.5 TUNER UNIT (DEH-P815RDS/EW)

● Connection Diagram



TUNER AMP UNIT
CN1 , 2

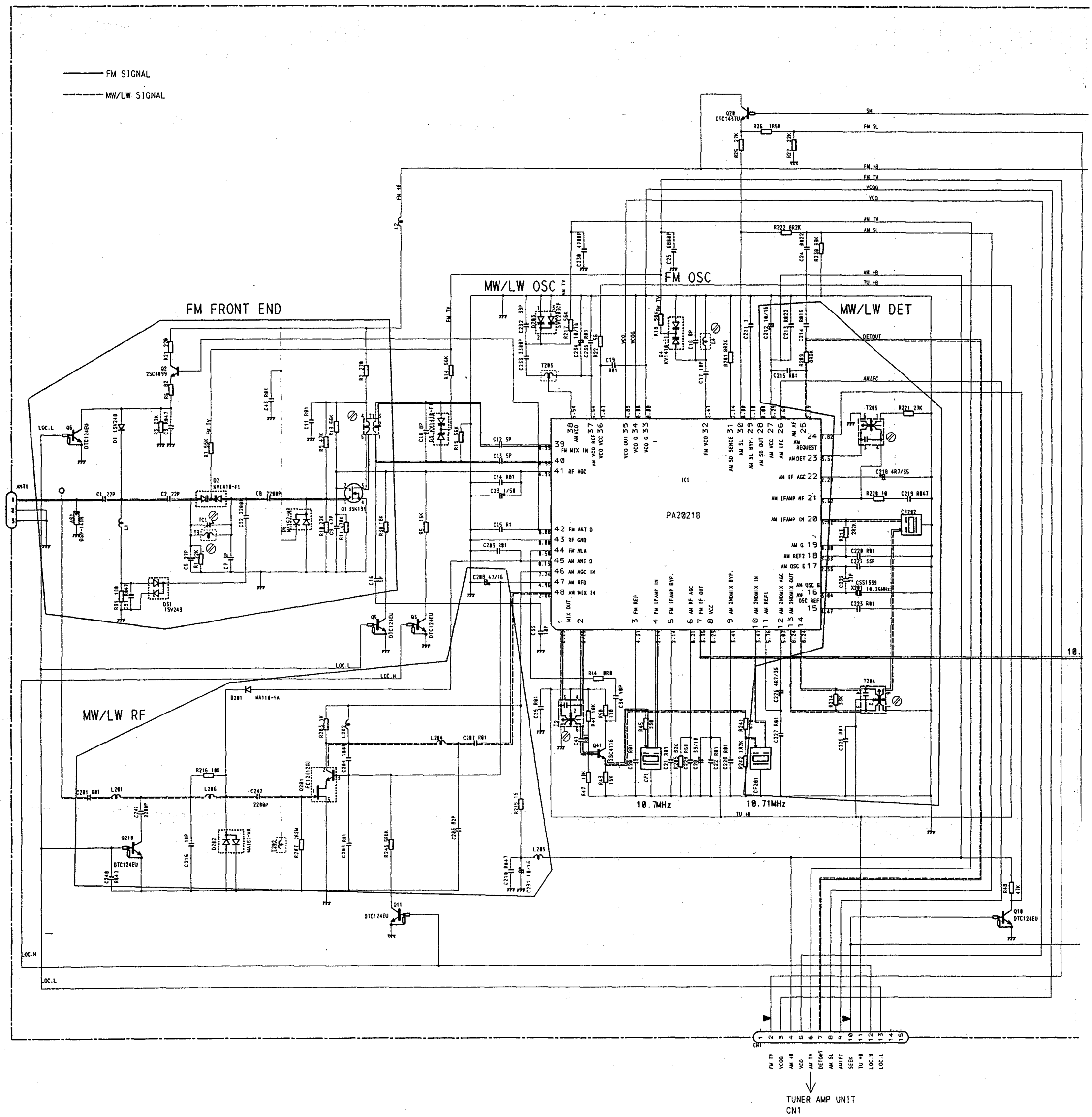
Fig.27

● Circuit Diagram

TUNER UNIT

NOTE:
- Symbol indicates a resistor. No differentiation is made between chip resistors and discrete resistors.
- Symbol indicates a capacitor. No differentiation is made between chip capacitors and discrete capacitors.

Decimal points for resistor and capacitor fixed values are expressed as:
2.2→2R2
0.022→R022



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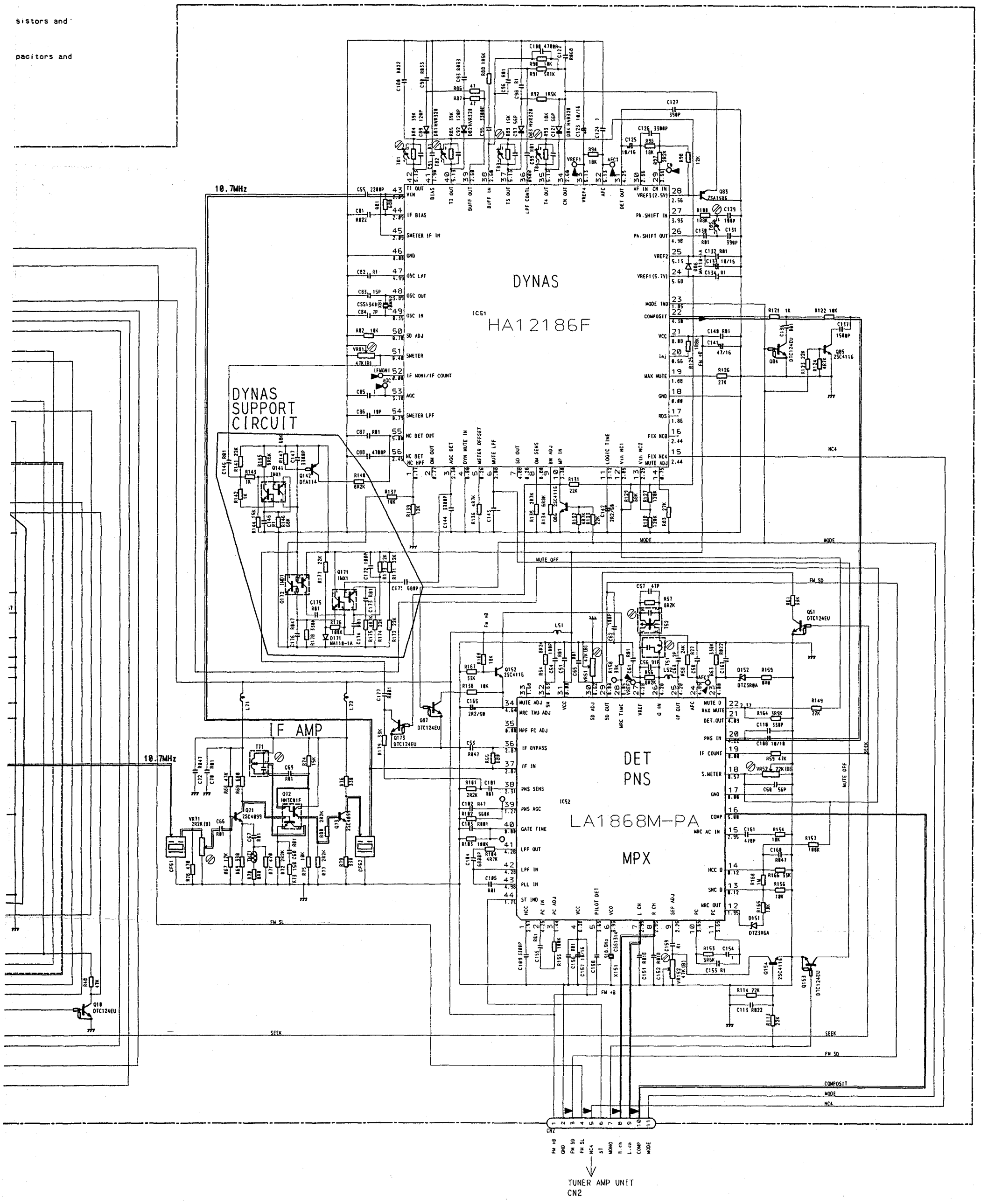


Fig.28

IC1201

UPD63700GF1

FOCUS/TRACKING

CARRIAGE/SPINDLE

DIGITAL SERVO

DIGITAL SIGNAL

PROCESSOR

IC1601 PD2026BM

IC1603 PD4501A

COMPRESSOR

IC1602 TA2063F

LOW-PASS FILTER

CD MECHANISM CONTROLLER

IC1701 PD4571A

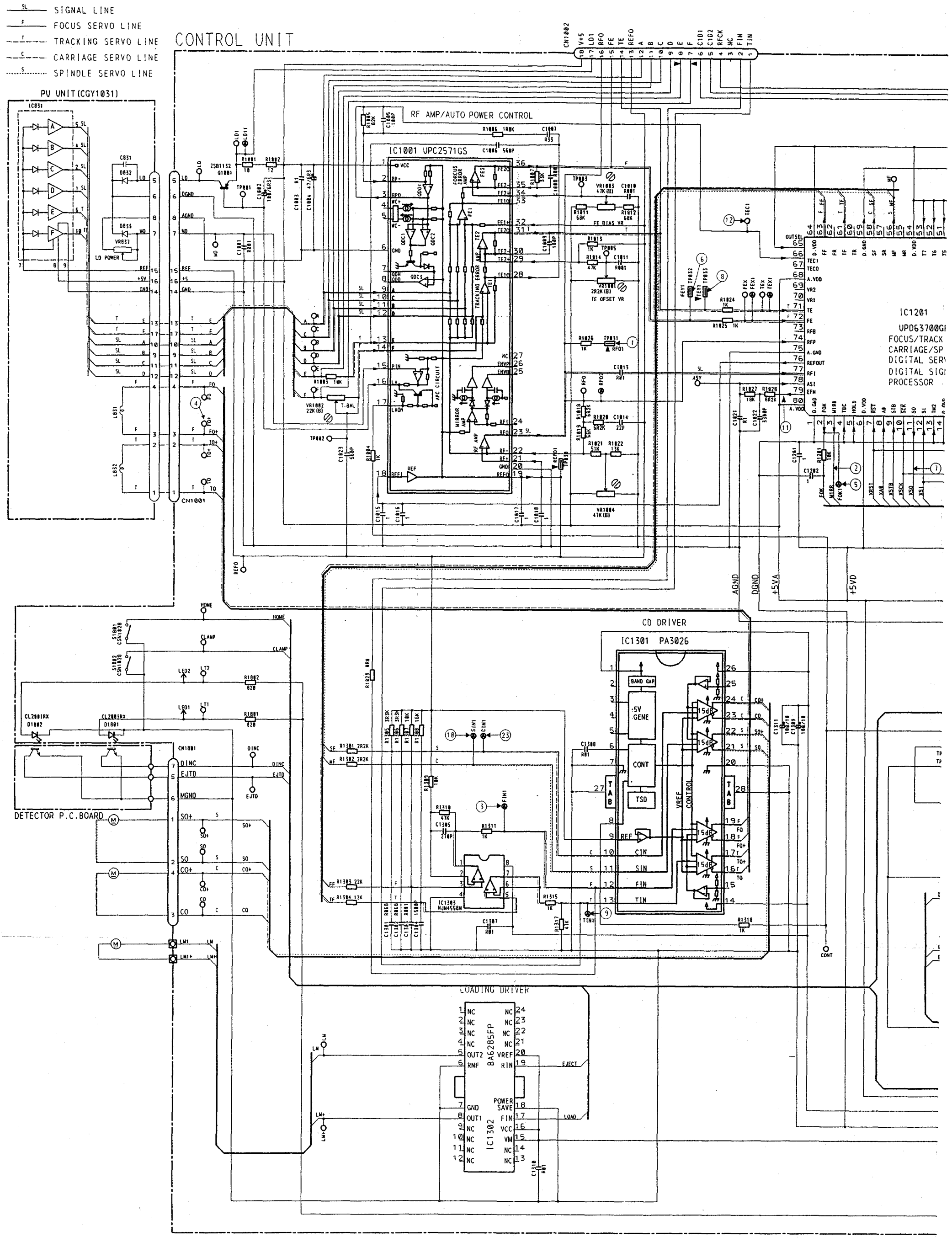
REGULATOR

TUNER AMP UNIT

CN981

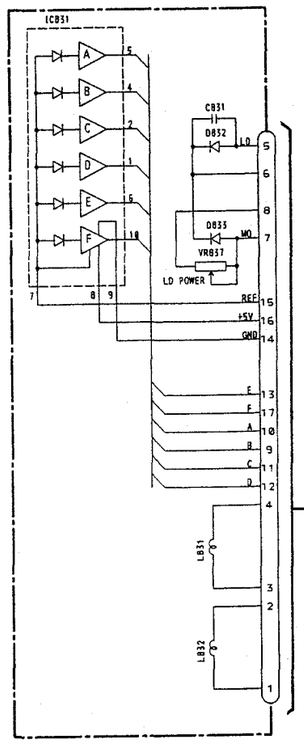
Fig.29

7.6 CD MECHANISM MODULE ● Circuit Diagram



● Connection Diagram

PU UNIT



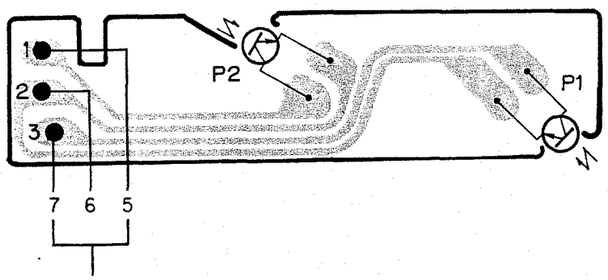
M1 SPINDLE MOTOR — 1, 2

M2 CARRIAGE MOTOR — 3, 4

DETECTOR P.C.BOARD — 5, 6, 7

CONTROL UNIT CN1001

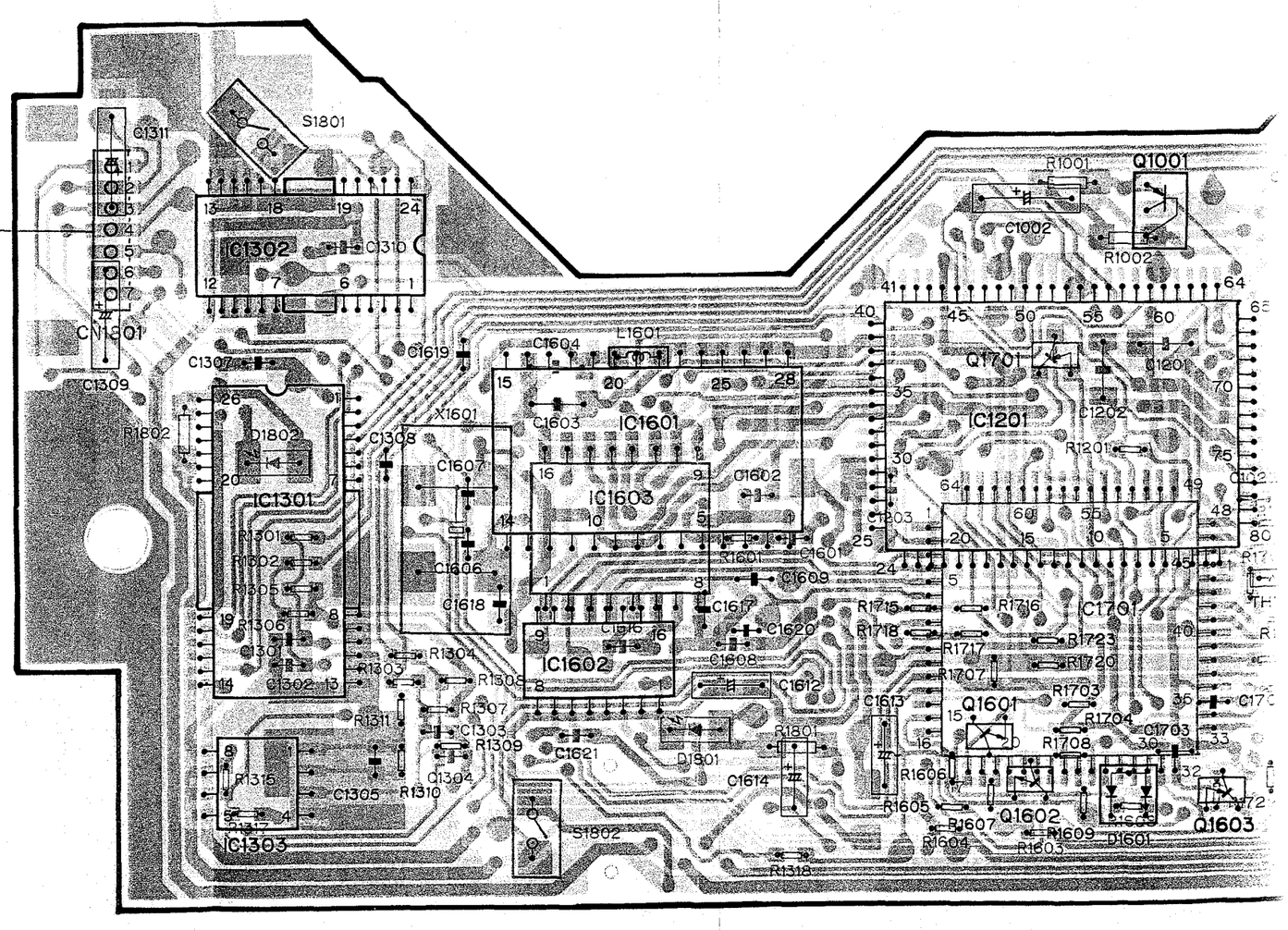
DETECTOR P.C.BOARD



CONTROL UNIT CN1801

CONTROL UNIT

IC. Q								
	IC1302 IC1301 IC1303	IC1601 IC1603 IC1602				Q1001 Q1701 IC1201		
ADJ					Q1601	Q1602	IC1701	Q1603



ROL UNIT

IC1302
IC1301
IC1303
IC1601
IC1603
IC1602
Q1601
Q1701
Q1602
Q1001
IC1201
IC1701
Q1603
IC1001
VR1003
VR1001
VR1002
VR1004
IC1902

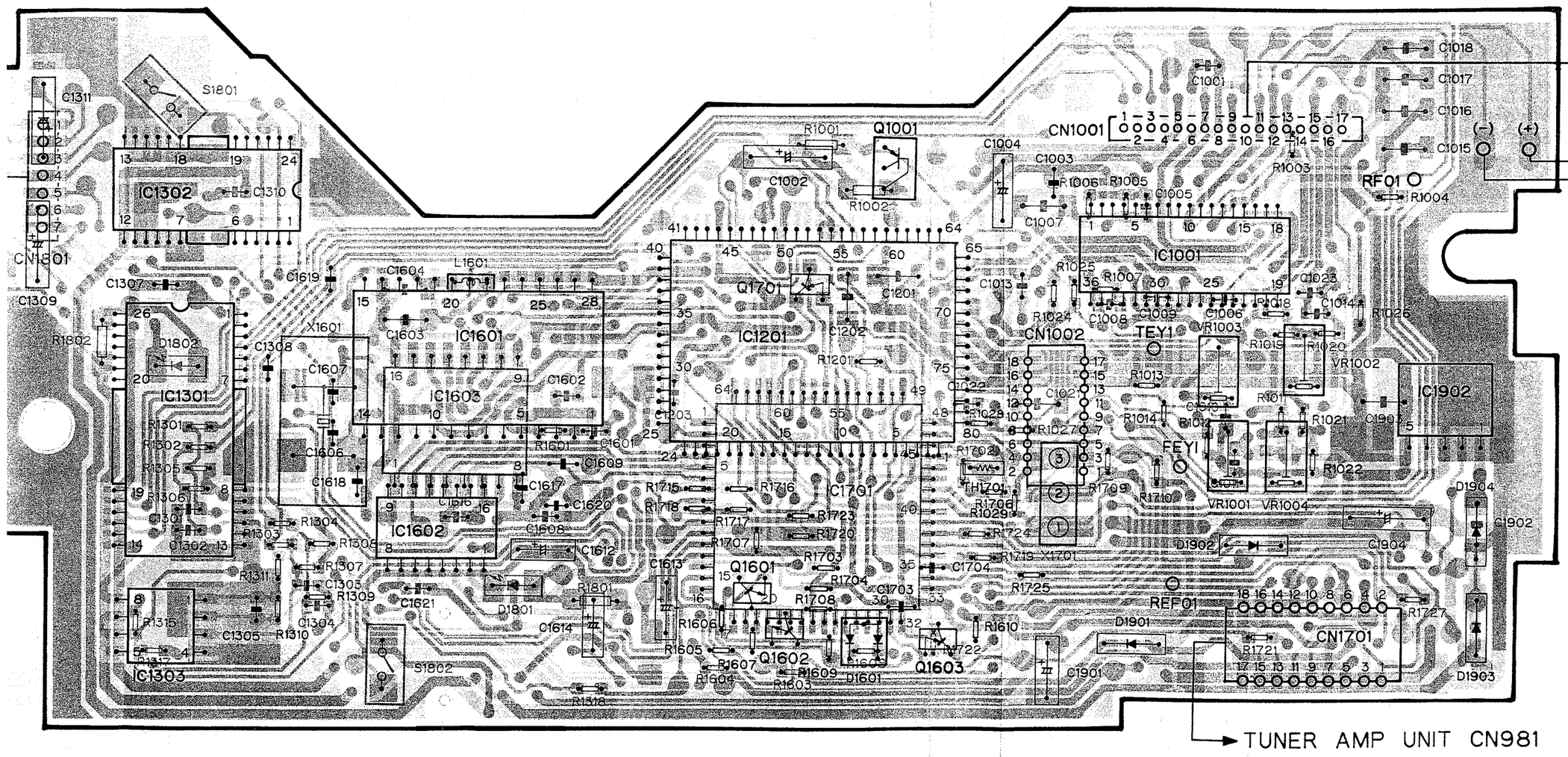
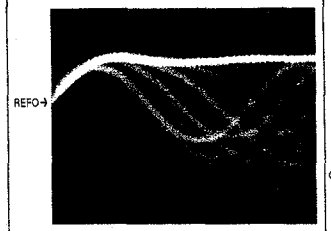


Fig.30

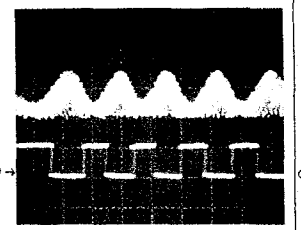
● Waveforms

Note: 1. The encircled numbers denote measuring pointes in the circuit diagram.
2. Reference voltage
REFO1 : 2.5V

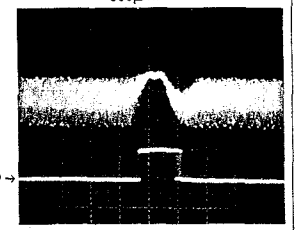
① RFO1 0.5V/div. 0.2µs/div.
Normal mode: play



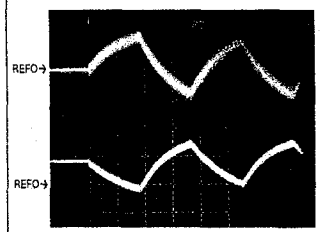
① CH1: RFO1 1V/div.
② CH2: MIRR 5V/div. 0.5ms/div.
Test mode: Tracking open



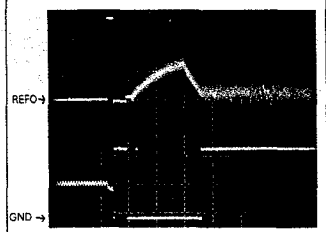
① CH1: RFO1 1V/div.
② CH2: MIRR 5V/div. 0.5ms/div.
Normal mode: The defect part passes 800µm.



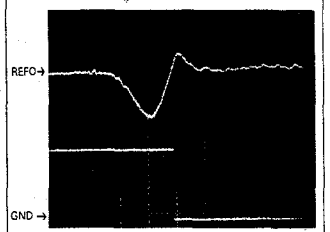
③ CH1: FIN 0.5V/div.
④ CH2: FO+ 2V/div. 0.2s/div.
Test mode: No disc, Focus close



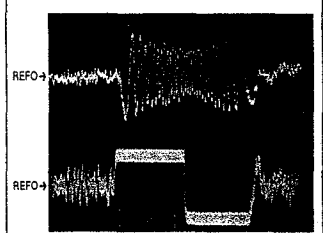
③ CH1: FIN 0.5V/div.
⑤ CH2: FOK 2V/div. 0.2s/div.
Normal mode: Focus close



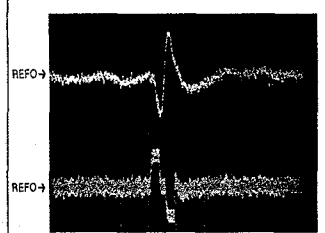
⑥ CH1: FEY1 0.5V/div.
⑦ CH2: XSO 2V/div. 1ms/div.
Normal mode: Focus close



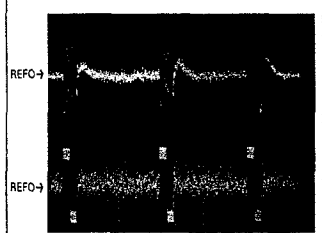
⑧ CH1: TEY1 0.5V/div.
⑨ CH2: TIN 0.5V/div. 0.5ms/div.
Test mode: 32 track jump (FWD)



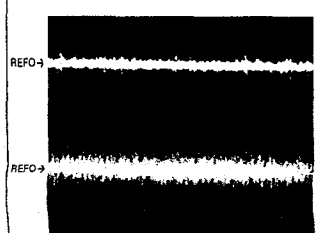
⑧ CH1: TEY1 0.5V/div.
⑨ CH2: TIN 0.5V/div. 0.5ms/div.
Test mode: Single jump (FWD)



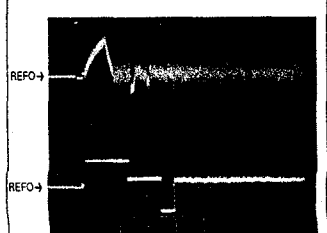
⑧ CH1: TEY1 0.5V/div.
⑨ CH2: TIN 0.5V/div. 5ms/div.
Test mode: 100 track jump (FWD)



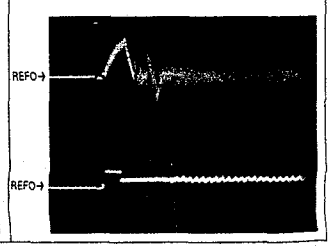
⑥ CH1: FEY 0.2V/div.
③ CH2: FIN 0.5V/div. 20ms/div.
Normal mode: Play



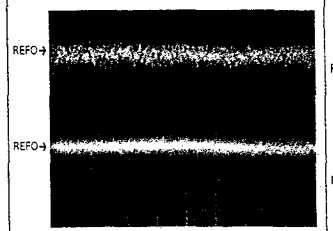
③ CH1: FIN 0.5V/div.
⑩ CH2: SIN 1V/div. 0.5s/div.
Normal mode: Focus close (12cm)



③ CH1: FIN 0.5V/div.
⑩ CH2: SIN 1V/div. 0.5s/div.
Normal mode: Focus close (8cm)

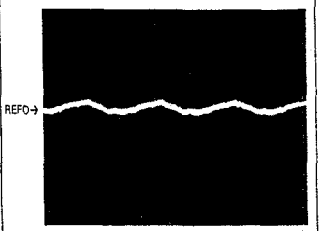


⑧ CH1: TEY1 0.5V/div.
⑨ CH2: TIN 0.5V/div. 20ms/div.
Normal mode: Play

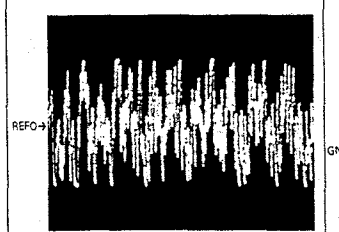


⑧ CH1: TEY1 0.5V/div.
㉓ CH2: CIN 0.5V/div. 5ms/div.
Test mode: 100 track jump (FWO)

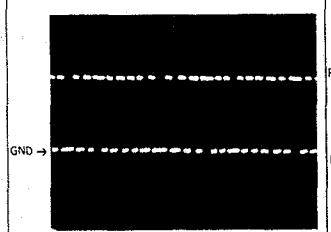
⑩ SIN 0.5V/div. 50ms/div.
Normal mode: Play (12cm disc)



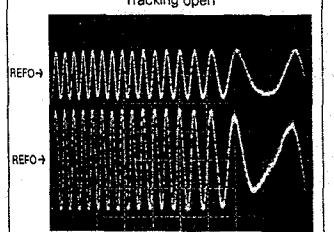
⑩ SIN 0.5V/div. 10ms/div.
Search (12cm disc)



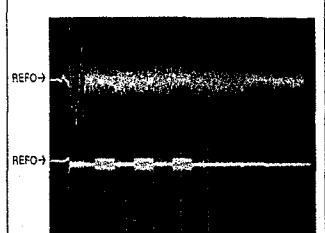
⑪ EFM 2V/div. 5µs/div.
Play



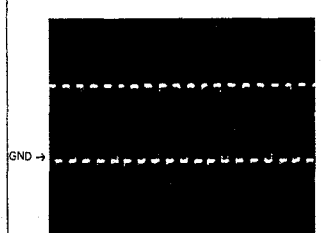
⑧ CH1: TEY1 1V/div.
⑫ CH2: TEC 1V/div. 2ms/div.
Test mode: Focus closed
Tracking open



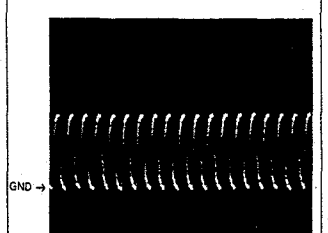
⑧ CH1: TEY1 0.5V/div.
⑥ CH2: FEY 0.5V/div. 0.1s/div.
Normal mode: AGC after focus close



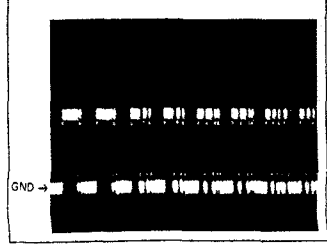
⑮ PLCK 2V/div. 0.5µs/div.
Play



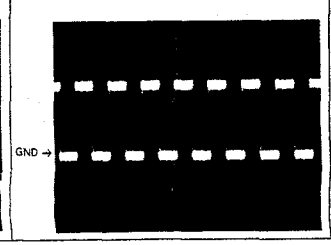
⑯ SCKO 2V/div. 1µs/div.
Play



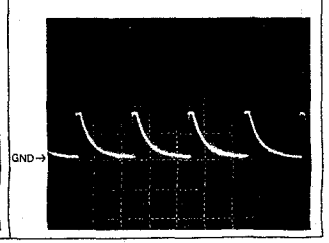
⑰ Dout 2V/div. 10µs/div.
Play

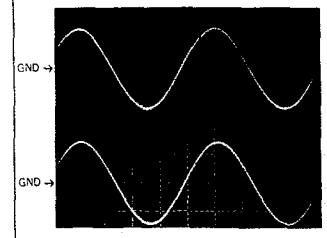
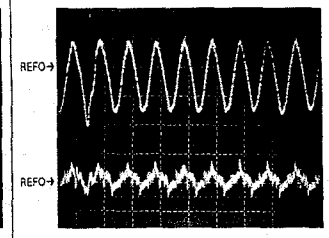
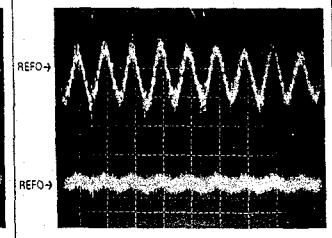


⑱ LRCK 2V/div. 20µs/div.
Play



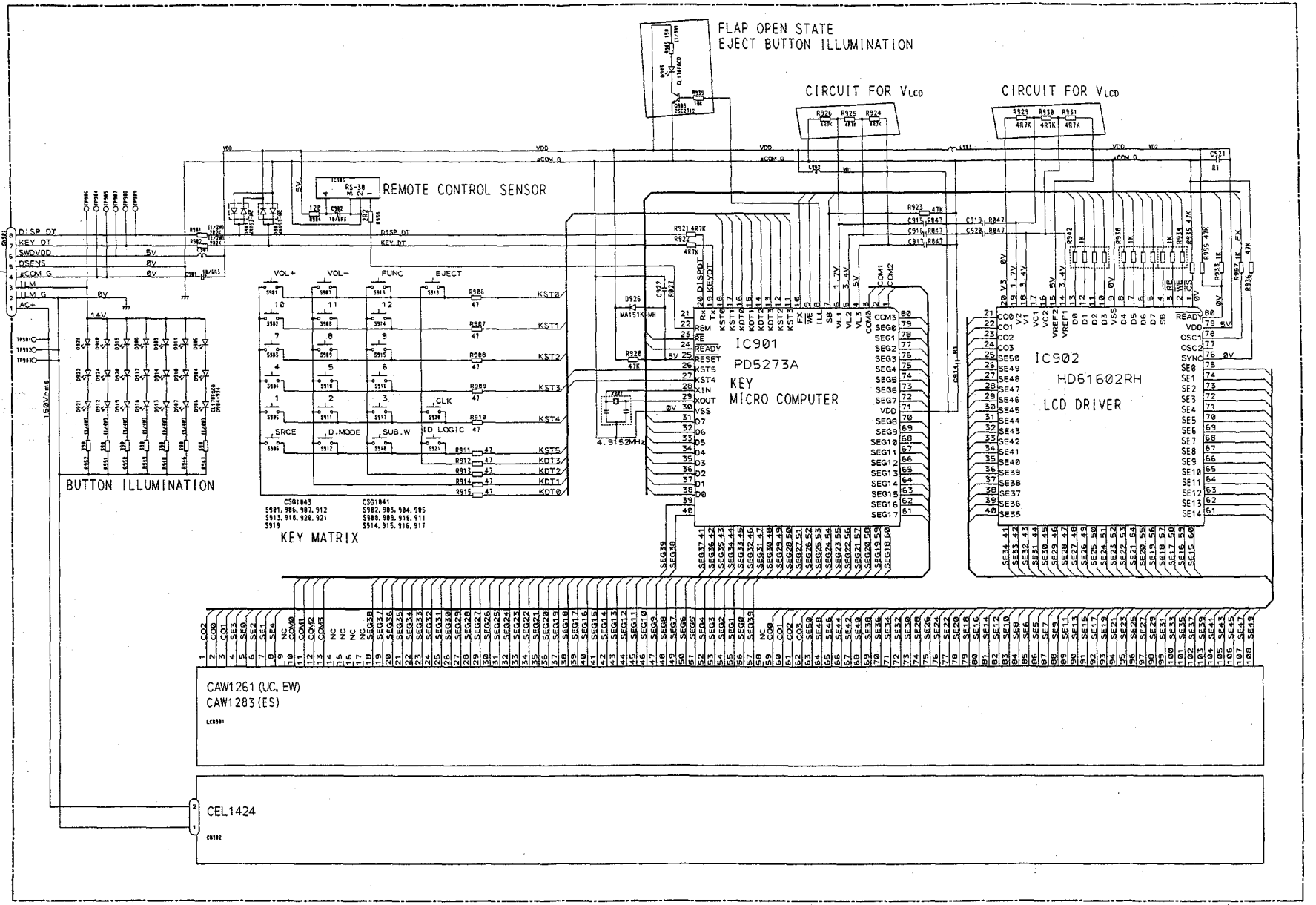
⑲ VD 5V/div. 50ms/div.
Normal mode: No disc



㉒ CH1: R OUT 1V/div. ㉑ CH2: L OUT 1V/div. 0.2ms/div. Normal mode: Play (1kHz 0dB)  	⑥ CH1: FEY1 1V/div. ③ CH2: FIN 1V/div. 1ms/div. Normal mode: During AGC  	⑧ CH1: TEY1 0.2V/div. ⑨ CH2: TIN 0.5V/div. 1ms/div. Normal mode: During AGC 

7.7 KEY BOARD UNIT

● **Circuit Diagram**



NOTE:

⊏⊐ Symbol indicates a resistor. No differentiation is made between chip resistors and discrete resistors.

⊣⊢ Symbol indicates a capacitor. No differentiation is made between chip capacitors and discrete capacitors.

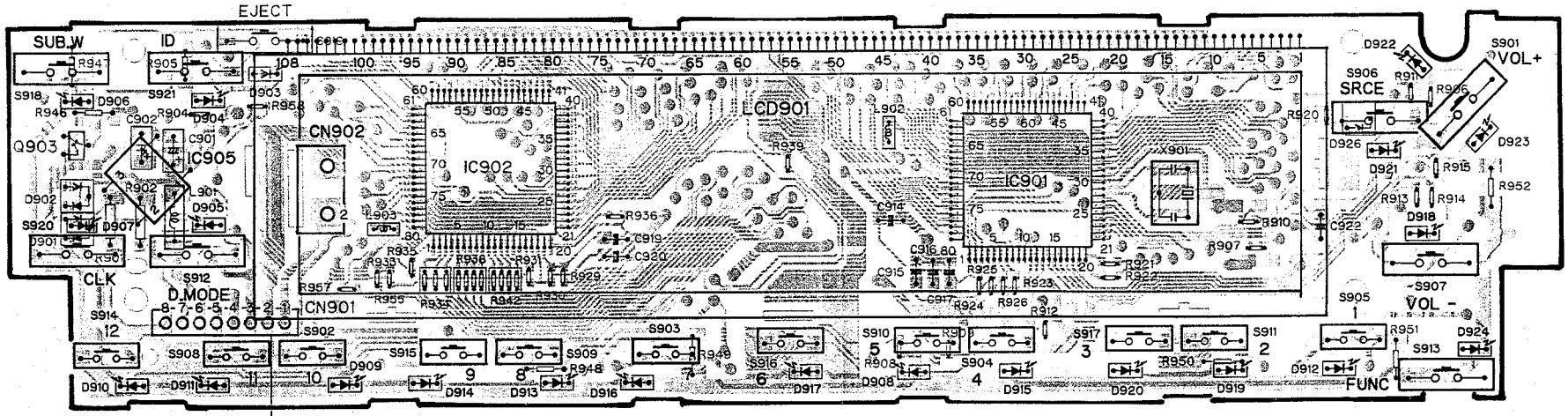
Decimal points for resistor and capacitor fixed values are expressed as:
2.2→2R2
0.022→R022

KEY BOARD UNIT
Consists of
·KEY BOARD P.C.BOARD
·SWITCH P.C.BOARD

Fig.31

● **Connection Diagram**

IC. Q Q903 IC905 IC902 IC901



	VC	EW	ES
S920	CLK	TA	CLK
S921	ID	AF	LO

Fig.32

8. CHASSIS EXPLODED VIEW

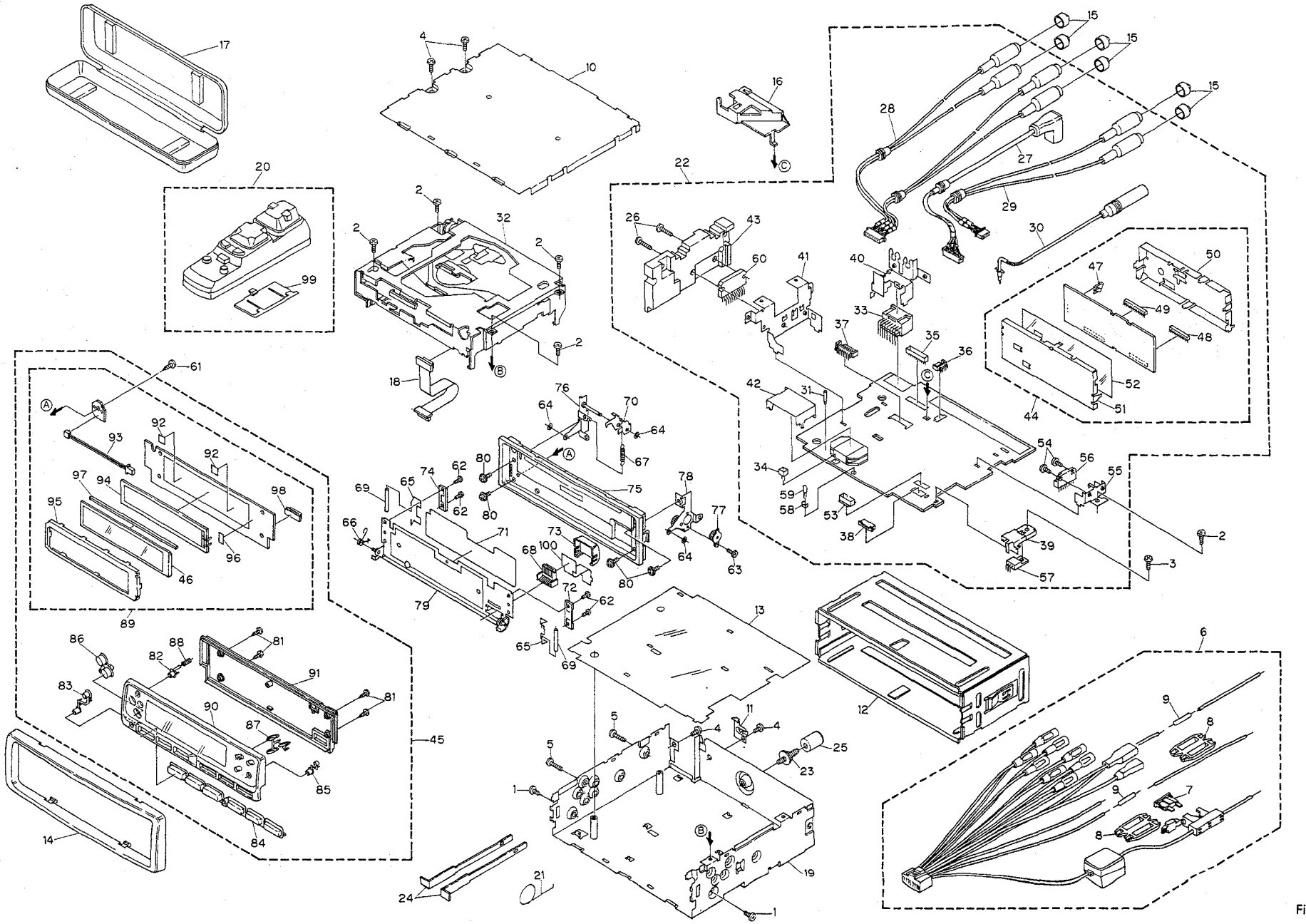


Fig.33

NOTES:
- Parts marked by "*" are generally unavailable because they are not in our Master Spare Parts List.
- Parts marked by "⊙" are not always kept in stock. Their delivery time may be longer than usual or they may be unavailable.

● **Parts List(DEH-P815/UC)**

Mark	No.	Description	Part No.
	1	Screw	BMZ30P040FMC
	2	Screw	BSZ26P050FMC
	3	Screw	BSZ26P080FMC
	4	Screw	BSZ30P060FMC
	5	Screw	BSZ30P120FMC
	6	Cord Assy	CDE4648
	7	Fuse(10A)	CEK1136
	8	Cap	CNS1472
	9	Resistor	RS1/2P102JL
	10	Case	CNB1881
	11	Holder	CNC3850
	12	Holder	CNC4946
	13	Insulator	CNM4377
	14	Panel	CNS3113
	15	Cap	CNV2680
	16	Holder	CNV4032
	17	Case Assy	CXA7194
	18	Connector Unit	CXA7292
	19	Chassis Unit	CXA7586
	20	Remote Control Assy	CXA7610
	21	Spring	CBH-865
	22	Tuner Amp Unit	CWX1791
	23	Screw	CBA1284
	24	Handle	CNC4947
	25	Bush	CNV1009
	26	Screw	BSZ26P120FMC
	27	Cord	CDE4489
	28	Cord	CDE4498
	29	Cord	CDE4499
	30	Antenna Cable	CDH1146
*	31	Clamper	CEF1004
	32	CD Mechanism Module	CXK2850
	33	Plug(CN901)	CKM1187
	34	Plug(CN662)	CKS-783
	35	Plug(CN401)	CKS1044
	36	Plug(CN801)	CKS1238
	37	Plug(CN851)	CKS1242
	38	Connector(CN661)	CKS2212
	39	Holder	CNC5013
	40	Bracket	CNC5638
	41	Bracket	CNC5639
	42	Holder	CNC5968
	43	Heat Sink	CNR1348
	44	Tuner Unit	CWE1358
	45	Detach Grille Assy	CXA7061
	46	LCD(LCD901)	CAW1261
	47	Antenna Jack	CKX1010
	48	Plug(CN2)	CKS1618
	49	Plug(CN1)	CKS1622
	50	Holder	CNC5358
	51	Holder	CNC5432
	52	Insulator	CNM4046
	53	Connector(CN981)	CKS2301
	54	Screw	BSZ30P060FMC
	55	Bracket	CNC5014
	56	IC(IC971)	PA2024A
	57	Transistor(Q983)	2SD2396
	58	Holder	CNV1906
	59	Lamp(IL661)	CEL1263
	60	IC(IC551)	PAL003A
	61	Screw	BPZ20P060FMC
	62	Screw	CBA1082
	63	Screw	CBA1176
	64	Washer	CBF1039
	65	Spring	CBH1528
	66	Spring	CBH1660
	67	Spring	CBH1696
	68	Connector(CN101)	CKS2780
	69	Roller	CLA2041
	70	Arm	CNC5640
	71	Sheet	CNM4179
	72	Holder	CNV2141
	73	Cover	CNV3965
	74	Holder	CNV4105
	75	Panel Unit	CXA7069
	76	Holder Unit	CXA7077
	77	Damper Unit	CXA7714
	78	Holder Unit	CXA7794
	79	Holder Unit	CXA7959
	80	Screw	PMS20P030FZK
	81	Screw	BPZ20P080FZK
	82	Button	CAC4062
	83	Button	CAC4064
	84	Button	CAC4141
	85	Button	CAC4149
	86	Button	CAC4381
	87	Button	CAC4387
	88	Spring	CBH1661
	89	Key Board Unit	CWM4047
	90	Grille Unit	CXA7075
	91	Cover Unit	CXA7172
	92	Film	CNM4349
	93	Cord	CDE4387
	94	EL	CEL1424
	95	Holder	CNC5497
	96	Spacer	CNM4359
	97	Rubber	CNV3967
	98	Connector(CN901)	CKS2733
	99	Battery Cover	CNS3477
	100	P.C.Board	CNP3847

● The DEH-P815RDS/EW and DEH-P813/ES Parts Lists enumerate the parts which differ from those enumerated in the DEH-P815/UC Parts List only. The parts other than those enumerated in the former are identical with those in the latter, to which you are requested to refer, accordingly. The DEH-P815/UC Parts List is given on page 107.

Mark	No.	Description	DEH-P815/UC Part No.	DEH-P815RDS/EW Part No.	DEH-P813/ES Part No.
	19	Chassis Unit	CXA7586	CXA7078	CXA7586
	22	Tuner Amp Unit	CWX1791	CWX1790	CWX1792
	28	Cord	CDE4498	CDE4482	CDE4498
	29	Cord	CDE4499	CDE4483	CDE4499
	44	Tuner Unit	CWE1358	CWE1356	CWE1358
	45	Detach Grille Assy	CXA7061	CXA7060	CXA7062
	46	LCD(LCD901)	CAW1261	CAW1261	CAW1283
	84	Button	CAC4141	CAC4065	CAC4142
	87	Button	CAC4387	CAC4382	CAC4388
	89	Key Board Unit	CWM4047	CWM4046	CWM4048
	90	Grille Unit	CXA7075	CXA7072	CXA7184

9. CD MECHANISM MODULE EXPLODED VIEW

● **Parts List**

Mark	No.	Description	Part No.
	1	Screw	PMS26P040FMC
	2	Control Unit	CWX1720
	3	Connector(17P)(CN1001)	CKS1955
	4	Connector(18P)(CN1701)	CKS2149
	5	Connector(18P)(CN1002)	CKS2811
	6	Connector(7P)(CN1801)	CKS2196
	7	CD Mechanism Unit	CXA7200
	8	Screw	BMZ20P030FMC
	9	Screw	BSZ20P040FMC
	10	Screw(M2×2)	CBA1250

Mark	No.	Description	Part No.
	11	Screw(M2×3)	CBA1077
	12	Screw(M2×6)	CBA1230
	13	Screw(M2×5)	CBA1296
	14	Washer	CBF1038
	15	Washer	CBF1060
	16	Spring	CBH1415
	17	Spring	CBH1417
	18	Spring	CBH1418
	19	Spring	CBH1743
	20	Spring	CBH1423
	21	Spring	CBH1457
	22	Spring	CBH1552
	23	Spring	CBH1553
	24	Spring	CBH1554
	25	Spring	CBH1665
	26	Spring	CBH1556
	27	Spring	CBH1557
	28	Spring	CBH1558
	29	Spring	CBH1664
	30	Spring	CBH1560
	31	Spring	CBH1576
	32	Spring	CBH1577
	33	Spring	CBH1666
	34	Spring	CBH1583
	35	Spring	CBH1628
	36	Spring	CBL1170
	37	Spring	CBL1171
	38	Spring	CBL1200
	39	Connector	CDE4543
	40	PU Unit	CGY1031
	41	Shaft	CLA2220
	42	Roller	CLA2255
	43	Shaft	CLA2256
	44	Frame	CNC5661
	45	Arm	CNC5565
	46	Lever	CNC4891
	47	Lever	CNC4892
	48	Bracket	CNC4893
	49	Arm	CNC4895
	50	Arm	CNC5566
	51	Bracket	CNC5424
	52	Spacer	CNM3315
	53	Holder	CNV4018
	54	Sheet	CNM3693
	55	Bracket	CNM3917
	56	Belt	CNT1053
	57	Clamper Unit	CXA6999
	58	Guide	CNV2891
	59	Holder	CNV3276
*	60	Roller	CNV3412

Mark	No.	Description	Part No.
	61	Damper	CNV3974
	62	Arm	CNV3565
	63	Arm	CNV3992
	64	Gear	CNV3567
	65	Gear	CNV3568
	66	Gear	CNV3569
	67	Gear	CNV3570
	68	Arm	CNV3571
	69	Holder	CNV3572
	70	Gear	CNV3573
	71	Holder	CNV3574
	72	Holder	CNV4067
	73	Holder	CNV3576
	74	Rack	CNV3577
	75	Arm	CNV3578
	76	Plate	CNV3629
	77	Guide	CNV3694
*	78	Gathering P.C.Board	CNX2103
	79	Gathering P.C.Board	CNX2270
	80	Screw Unit	CXA2375
	81	Motor Unit(M2)	CXA7150
	82	Chassis Unit	CXA7196
	83	Arm Unit	CXA5603
	84	Arm Unit	CXA5604
	85	Bracket Unit	CXA5605
	86	Lever Unit	CXA7197
	87	Arm Unit	CXA5607
	88	Arm Unit	CXA5608
	89	Gear Unit	CXA6976
	90	Motor Unit(M1)	CXA7001
	91	Bracket Unit	CXA5938
	92	Frame Unit	CXA6192
	93	Motor Unit(M3)	CXA6456
	94	Screw	JFZ17P035FNI
	95	Screw	JFZ20P014FMC
	96	Screw	JFZ20P020FZK
	97	Screw	JFZ20P025FMC
	98	Photo-transistor(P1,2)	PT4800
	99	Washer	YE15FUC
	100	Washer	YE20FUC
	101	•••••	
	102	Sheet	CNM4028
	103	Spring	CBH1710
	104	Spacer	CNC5436
	105	Screw	JFZ20P045FMC
	106	Washer	CBF1061
	107	Screw	JGZ17P025FZK

● **CD Mechanism Module**

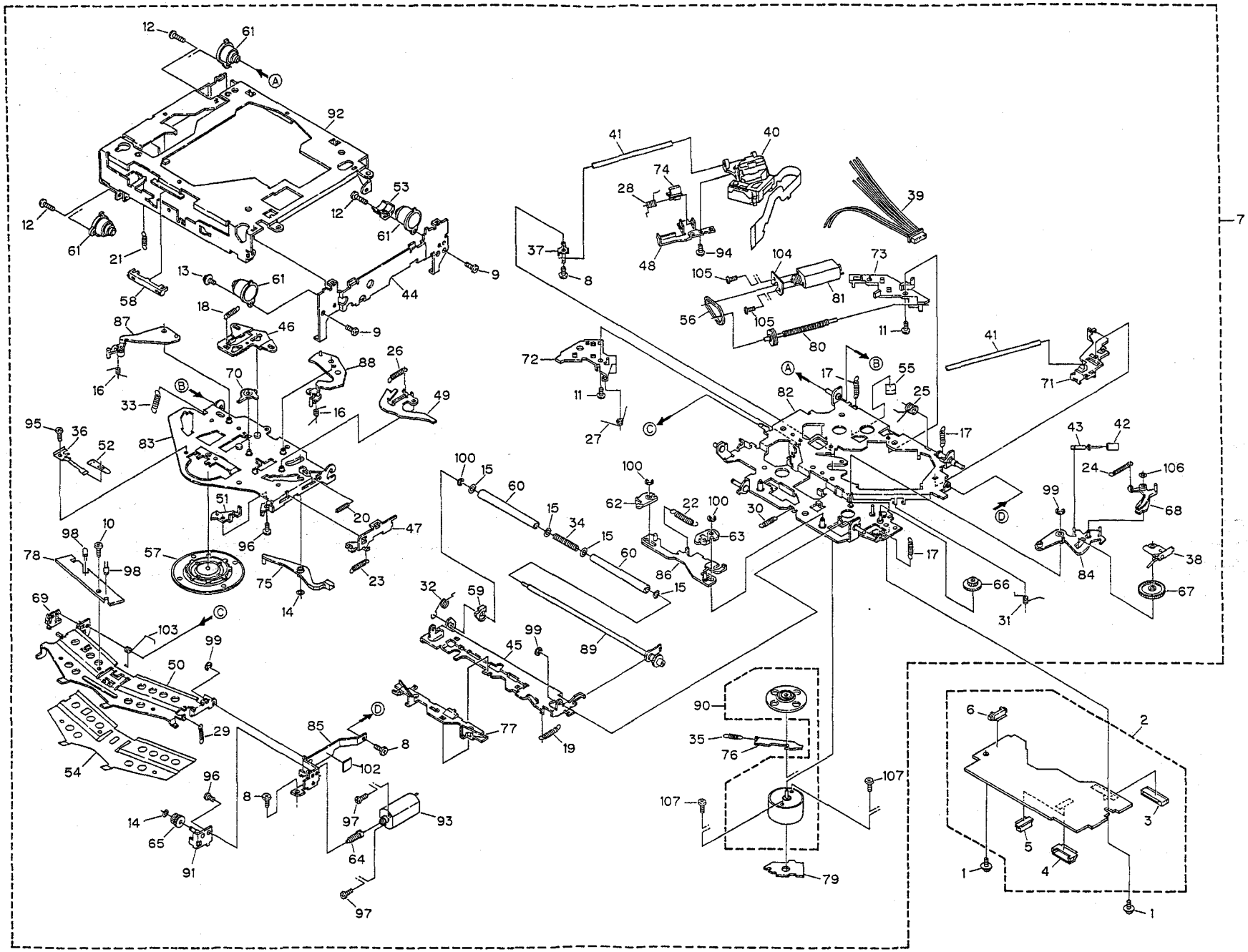


Fig.34

10. PACKING METHOD

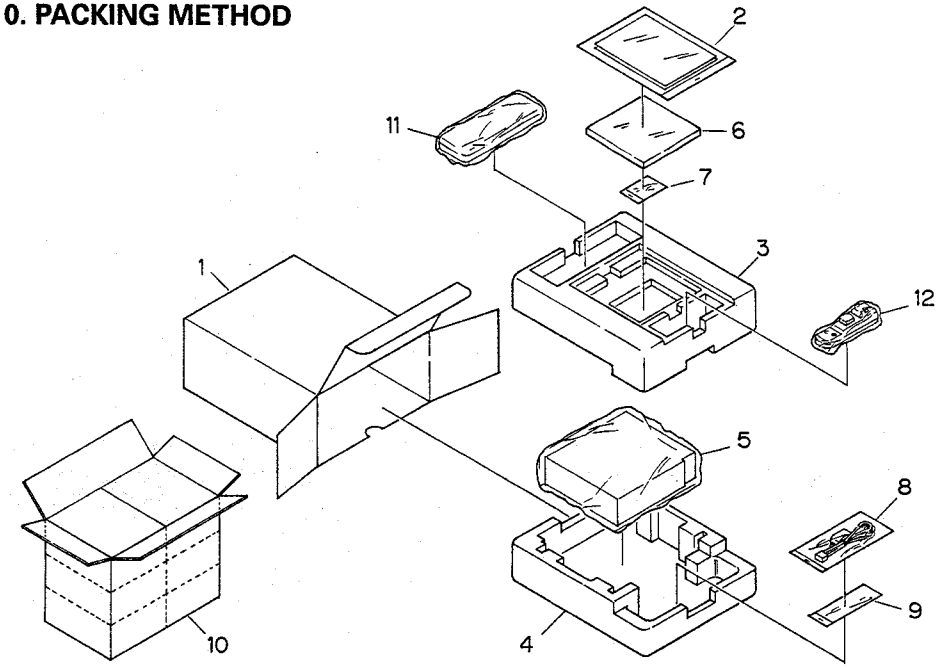


Fig.35

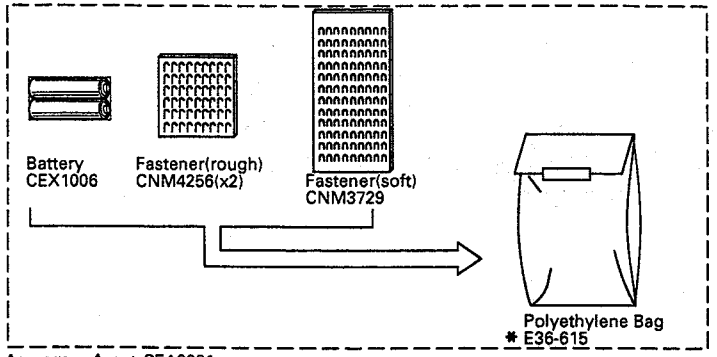
● **Parts List**

*:Non Spare Parts

		DEH-P815/UC	DEH-P815RDS/EW	DEH-P813/ES
		Part No.	Part No.	Part No.
	1 Carton	CHG2601	CHG2600	CHL2602
	2-1 Owner's Manual	CRD1919	CRD1856	CRD1860
	2-2 Installation Manual	CRD1900	CRD1859	CRD1899
	2-3 Reference Manual	CRB1351	·····	·····
*	2-4 Card	ARY1048	·····	·····
	2-5 Owner's Manual	·····	CRD1857	·····
	2-6 Installation Manual	·····	CRD1898	·····
*	2-7 Passport	·····	CRY1013	·····
	3 Protector	CHP1699	CHP1699	CHP1699
	4 Protector	CHP1700	CHP1700	CHP1700
	5 Polyethylene Bag	CEG1173	·····	·····
	Cover	·····	CEG1092	CEG1092
	6 CD	CPJ1004	CPJ1004	CPJ1004
	7 Accessory Assy	CEA2081	CEA2081	CEA2081
	8 Cord Assy	CDE4648	CDE4648	CDE4648
	9 Accessory Assy	CEA2066	CEA2065	CEA2067
	10 Contain Box	CHL2601	CHL2600	CHL2602
	11 Case Assy	CXA7194	CXA7194	CXA7194
	12 Remote Control Assy	CXA7610	CXA7610	CXA7610

● **Owner's Manual**
● **Installation Manual**
● **Reference Manual**

Part No.	Model	Language
CRD1919 CRD1900	DEH-P815/UC	English, French
CRD1856 CRD1859	DEH-P815RDS/EW	English, Italian, French, German, Dutch, Spanish
CRD1857 CRD1898	DEH-P815RDS/EW	Finnish, Norwegian, Swedish
CRD1860 CRD1899	DEH-P813/ES	English, French, Spanish, Arabic
CRB1351	DEH-P815/UC	English



Accessory Assy CEA2081

Fig.36

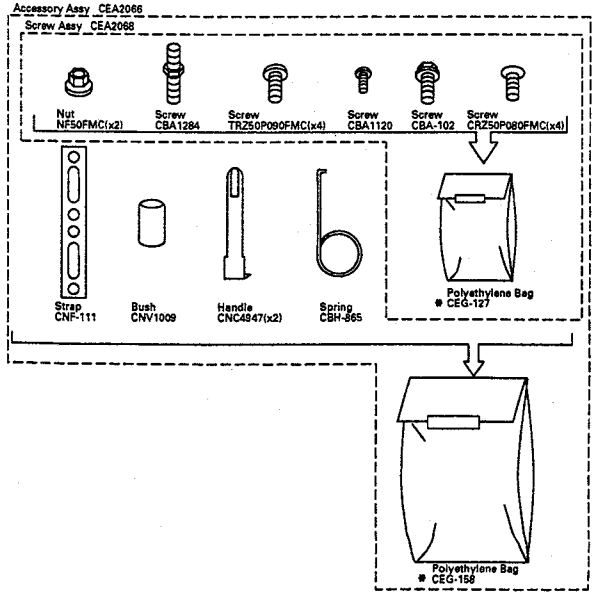


Fig.37

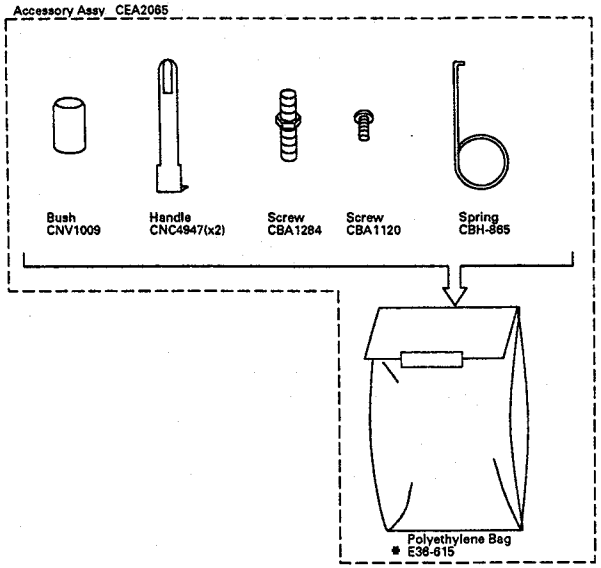


Fig.38

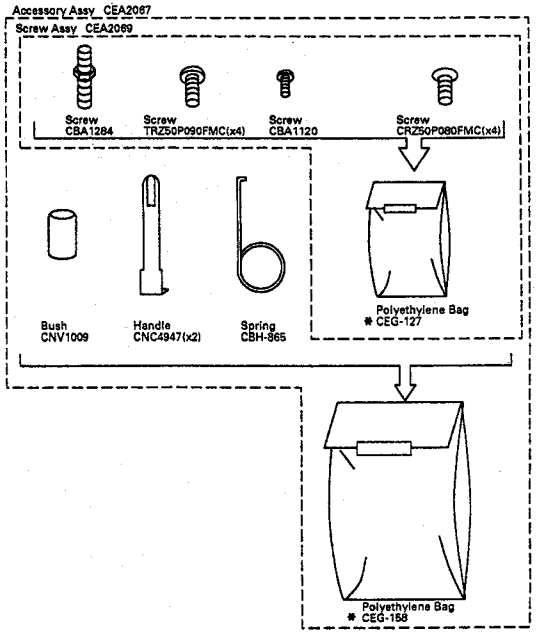


Fig.39

PIONEER®
The Art of Entertainment

Service Manual

ORDER NO.
CRT1767

MULTI-CD CONTROL HIGH POWER CD PLAYER WITH RDS TUNER

DEH-P815RDS EW8

COMPACT disc DIGITAL AUDIO

● **As to DEH-P815RDS/EW8 , refer to CRT1674 (DEH-P815RDS/EW) because of the same contents.**

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